DOCUMENT RESUME

ED 302 240 IR 052 571

TITLE	Library Micro-Computing, Vol. 2. Reprints from the Best of "ONLINE" and "DATABASE."
INSTITUTION	Online, Inc., Weston, CT.
PUB DATE	87
NOTE	132p.; For Vol. 1, see IR 052 570; for other volumes in this series, see IR 052569-572.
AVAILABLE FROM	ONLINE, Inc., 11 Tannery Lane, Weston, CT 06883.
PUB TYPE	Collected Works - General (020) -- Journal Articles (080) -- Reports - Descriptive (141)
EDRS PRICE	MF01/PC06 Plus Postage.
DESCRIPTORS	Academic Libraries; Artificial Intelligence; Bibliographies; *Computer Software; *Database Management Systems; Electronic Mail; Higher Education; Management Information Systems; Medical Libraries; *Microcomputers; *Online Searching; Special Libraries; *Technological Advancement; *Users (Information)
IDENTIFIERS	DIALOG; *Spreadsheets; Workstations

ABSTRACT

Reprints of 19 articles pertaining to library microcomputing appear in this collection, the second of two volumes on this topic in a series of volumes of reprints from "ONLINE" and "DATABASE" magazines. Edited for information professionals who use electronically distributed databases, these articles address such topics as: (1) the searcher's workstation; (2) DIALOG's search assistance software; (3) electronic mail for the online professional; (4) maximizing the power of an electronic spreadsheet; (5) help in choosing microcomputer software and hardware; and (6) the IBM personal computer as an online search machine. The articles and columns appearing in this volume have been selected from "ONLINE" and "DATABASE" issues from 1985 though early 1988, with the majority in the 1986-1987 period. (CGD)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED302240

LIBRARY MICRO-COMPUTING

VOL. 2

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☑ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

BEST COPY AVAILABLE

REPRINTS FROM THE BEST OF ONLINE® database®

IR052571

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Jeffrey Pemberton

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

LIBRARY MICROCOMPUTING - VOLUME II

TABLE OF CONTENTS

BIBLIO-LINK AND PRO-CITE: THE SEARCHER'S WORKSTATION by Norman Hoyle and Kathleen McNamara 1

DIALOGLINK: A REVIEW OF DIALOG'S SEARCH ASSISTANCE SOFTWARE by Joanne Witiak 7

NUTSHELL: A SOFTWARE REVIEW OF A FILE MANAGER by Brian Phillips 11

MODEM7 AND DOWNLOADING by Paula Hane 15

SUBROUTINES FOR YOUR ILL PROGRAM (SOURCE CODE) by Paul W. Kittle 23

CODE TRANSLATIONS: dBASE II, R:BASE 5000, dBASE III PLUS (SOURCE CODE) by Paul W. Kittle 26

"MAKEDB" A Low Cost Alternative To Sci-Mate, Pro-Cite, et al...Usable With Free "Generic" Retrieval Systems by Clyde W. Grotophorst 28

ELECTRONIC MAIL FOR THE ONLINE PROFESSIONAL: A REVIEW OF DIALMAIL by Monica Ertel and Norman Kline 35

COMPUTERIZED ILL'S (SOURCE CODE) by Paul W. Kittle 42

THE USE OF KEYBOARD MACROS IN ONLINE SEARCHING by Christopher Soo-Guam Khoo 47

MAXIMIZING THE POWER OF AN ELECTRONIC SPREADSHEET by David J. Peterson 53

PROGRAMMING FOR APPEARANCE (SOURCE CODE) by Paul W. Kittle 55

DO IT FOR LESS! A COMPARISON OF LOW-COST COMMUNICATIONS SOFTWARE FOR THE IBM PC by Stephen Clancy 61

PARADOX: A NEW DBMS PROGRAM WITH ARTIFICIAL INTELLIGENCE FEATURES ENTERS AN ALREADY CROWDED MARKET by Nancy K. Herther 71

HELP IN CHOOSING MICROCOMPUTER SOFTWARE AND HARDWARE - AN UPDATE by Anne M. Fredenburg and W. Jean Pugh 78

SELECTING AN ELECTRONIC MAIL SERVICE...A QUEST FOR THE HOLY GRAIL? by Susan A. Tucker 94

DIARY OF A CONVERSION LOTUS 1-2-3 TO SYMPHONY 1.1 by Larry Dunnewin 110

THE IBM PC AS AN ONLINE SEARCH MACHINE PART 6: UPLOADING by Stuart J. Kolner 114

THE IBM PC AS AN ONLINE SEARCH MACHINE PART 5: SEARCHING THROUGH CROSSTALK by Stuart J. Kolner 119

BIBLIO-LINK AND PRO-CITE: THE SEARCHER'S WORKSTATION

by Norman Hoyle
State University of New York, Albany
and
Kathleen McNamara
New York State Department of Health

Personal Bibliographic Software has been producing specialized microcomputer database systems to manage bibliographic citations since 1983. The newest entry in this series is Pro-Cite, which was developed, according to the publisher, "to make it easy to manage a bibliographic database and to create and maintain properly formatted bibliographies and reading lists." It is offered as a "key part" of the "Scholar's Workstation."

A companion product from the same publisher, called Biblio-Link, takes downloaded records from an online search and converts them into a form usable by Pro-Cite. This means that downloaded records, with great simplicity, can be used to populate a local database, enabling the information professional to reformat, rearrange, and repackage those records to meet a client's special needs. Anyone who does searching for clients or patrons and who wants to submit the results in a more useful or attractive manner will want to consider these powerful products.

Although the two products seem directed principally toward the scholar, we shall be examining them here as tools of the information professional, as components, so to speak, in the "Searcher's Workstation."

BIBLIO-LINK

Biblio-Link, it must be emphasized, is not in any way a search tool or helper. It assumes that a search has already been conducted, and that the results of the search session have somehow been saved to a text file readable by an IBM PC, XT, or AT compatible computer. The method of downloading is left entirely to the searcher.

The purpose of Biblio-Link, rather, is to con-

►

vert the downloaded records into a form that can be read by Pro-Cite. This is no trivial task, given the enormous variations in the databases that might have been searched, the large number of document formats that might have been encountered, and the flexibility allowed by Pro-Cite databases themselves. Understandably, Biblio-Link is not a universal converter. Separate versions are available for BRS, DIALOG, OCLC, and RLIN, with others promised soon. At $195.00 each, however, this quickly becomes an expensive proposition for a department which routinely searches databases from multiple databanks. For this review we used a pre-release copy of a new BRS version, called Biblio-Link to BRS. Similarly-revised versions for the other major systems should be available by the time this review is published.

While we found the earlier Biblio-Link unnecessarily confusing at almost every turn, the new version has a much improved, menu-driven user interface. Even the first-time user should be able to transfer a group of downloaded records into a Pro-Cite database in just a few minutes, with a minimum of anxiety.

The new Biblio-Link needs just two pieces of information from the user: the name of the downloaded BRS text file and the name of the Pro-Cite database into which the downloaded records are to be transferred. If the latter does not already exist, the four files which comprise a Pro-Cite database will be set up. The user can then choose the TRANSFER option from the menu to begin the actual conversion process. As the records are read into the Pro-Cite database, they are displayed on the screen in their old BRS format. The process is quite rapid. A test file of 34 records from **MEDLINE**, many with long abstracts, required just 54 seconds on an AT-class machine using a floppy disk drive.

Once the transfer process is completed, the user may choose to transfer the results of another downloaded search into the same database, or create or add to a completely different database. One of the impressive features of the Biblio-Link/Pro-Cite combination is the ease with which the results of numerous search sessions, conducted on many different online databases, can be merged into a single local database.

Users will probably be eager to see the results of all this processing, and may even be skeptical that the records have been properly transferred. It is therefore unfortunate, although understandable, that the transferred records are in no way viewable from within Biblio-Link itself. Nor are they viewable from DOS. To see the records, one must exit from Biblio-Link, which is a standalone program, boot up Pro-Cite, and load the database which contains the newly-transferred records. If there is a problem of some kind, the user must then exit from Pro-Cite, boot up Biblio-Link, make the necessary changes, and start the process all over again. It would be much more convenient if Biblio-Link could somehow be run directly from Pro-Cite.

Biblio-Link, we found, performs its conversion task exceedingly well. In our test files, it stripped out the extraneous BRS system messages, and correctly deposited all data elements in their appropriate Pro-Cite fields. Anyone who has worked with the vagaries of bibliographic data in a computerized environment will appreciate, even marvel at, what has been accomplished here.

One of the impressive features of the Biblio-Link/Pro-Cite combination is the ease with which the results of numerous search sessions, conducted on many different online databases, can be merged into a single local database.

HOW BIBLIO-LINK WORKS

Biblio-Link maintains a table of all of the paragraph labels of all of the BRS databases that are known to it as of a given date. Each BRS paragraph is by default mapped into one of the 45 specialized fields recognized by Pro-Cite databases. The data from the DE paragraph in BRS, for example, is mapped into the Pro-Cite Index field, data from the IN paragraph is mapped into the Affiliation field, and so on. Additionally, Biblio-Link will by default assign to each BRS database one of the twenty workforms available in Pro-Cite: Books, Journals, Reports, Trade catalogs, Data files, etc. The records from MEDLINE will thus be treated as journal articles, and will be so formatted when they are brought up in Pro-Cite.

One of the important features of Biblio-Link is that the user can, through the CUSTOMIZE option on the main menu, re-map any of the default equivalencies, either for fields or for workforms. In our own case, we discovered that the accession numbers (the AN paragraph) from a downloaded MEDLINE search were not being brought over to Pro-Cite. Since this data was important to our application, we wanted to customize Biblio-Link to meet our special needs. Getting into the customization utility,

we determined that the AN values were being routed to the RpID (Report Identification) field. Unfortunately, RpID is not a field in the Journal-Long workform, which Biblio-Link assigns to MEDLINE, and so the data was not being transferred. The situation was easily rectified. We simply re-mapped the default setting for AN to the Note field and ran our file once more through Biblio-Link. This time the AN values were captured nicely, as can be seen from the accompanying Pro-Cite output.

The customization utility also makes provision for adding new BRS databases as they come along. Usually, this will involve nothing more than adding the 4-letter BRS database label to the list already maintained by Biblio-Link.

The customization utility also makes provision for adding new BRS databases as they come along. Usually, this will involve nothing more than adding the four-letter BRS database label to the list already maintained by Biblio-Link. If the new database should contain any paragraph labels not recognized by Biblio-Link, they can be added at this time, and the default workform can be changed as well. This process goes smoothly, making it a simple matter to keep up with BRS changes and so protect one's investment.

Bibliographic data is so elusive and so susceptible to subtle variations and inconsistencies that we did not expect every record or even every database to be converted perfectly. In actuality, we encountered very few problems, and some of these were of our own making. We like to keep our downloaded files as small as possible, and so we tend to toggle the CAPTURE feature of our communications software on and off so that we are saving only relevant data. Biblio-Link, however, seems to want to work with the entire search session, complete with sign-on and sign-off messages. When some of that system information is lacking, it can become confused and do unpredictable things.

Biblio-Link to BRS can also be made to work with BRS/After Dark and BRS Colleague. Our draft manual was lacking the section on these services, and so we did not test them. We presume, however, that the process would be essentially the same and that the results would be quite as satisfactory.

PRO-CITE

Pro-Cite is the successor of the Professional Bibliographic System, which was reviewed in *DATABASE* in December, 1985. The conclusion then was that the program was "powerful and easy to use." The newly updated version, with its completely revamped user interface, takes power and ease of use several steps further. The program seems a bit pricey, though, at $395, especially considering the fact that it is a very specialized tool, not a general-purpose database management system like dBASE or R:BASE. It manages, organizes, and immaculately formats bibliographic citations. Within the limits of what it sets out to do, however, Pro-Cite performs exceptionally well, and anyone who works frequently with bibliographic data might well consider it a bargain at twice the price.

Within the limits of what it sets out to do, however, Pro-Cite performs exceptionally well, and anyone who works frequently with bibliographic data might well consider it a bargain at twice the price.

No bargain at all is the copy protection scheme which has been inflicted upon the program. We find it a great irony that, at a time when most of the commercially-available software has become protection-free, a product like Pro-Cite, aimed specifically at the scholar, should remain copy protected. Are scholars less trustworthy than the business people who buy dBASE III Plus? Are they more willing to put up with the annoyances and hassles of copy protection? Does Personal Bibliographic Software have less consideration for its users than does Ashton-Tate? As much as we admire Pro-Cite, we give it several demerits for being copy protected. (The copy protection does allow the program to be installed and run from a hard disk without using a master disk each time.)

USING PRO-CITE

Pro-Cite has a crisp, modern feel to it. The program is controlled, in the Lotus fashion, by light bar menus. It has, in fact, the same kind of user interface employed by the new Biblio-

►

Link, making both programs easier to use. Movement up and down the hierarchical menu system seemed for the most part to be natural and intuitive, although on occasion there was no on-screen indication that the current activity is to be exited by pressing the Esc key. Help is available at any time by pressing the Home key. Because the user interface is so transparent, most users should be able to get along without frequent reference to the manual. The printed documentation, while a bit ponderous, we found to be generally serviceable, even though the index is incomplete.

Once the program is loaded, the user must first select a database to bring in to use; if a database by the specified name does not exist, a new one will be created. Inexperienced users may not realize that full drive and path designations must be incorporated into the database name. If they are not, all file searching and creation will take place on the default drive. In that way, the copy protected Pro-Cite disk could be rapidly filled with local data files.

After a database has been brought into use, the user will be presented with the main menu. From here all of the standard database operations are available: EDIT, SELECT, SORT, FORMAT, MERGE, DELETE, and INDEX. Menu options are selected by moving the highlighted bar to the desired choice and pressing Return, or by simply pressing the first letter of the menu option. For some of the options, a second-level menu will be presented. We found the navigation process to be quite simple.

The features of Pro-Cite are so numerous that within the compass of this short review we cannot possibly cover them all. We shall attempt, instead, to highlight those aspects most likely to be of interest to online searchers who will be bringing in downloaded records through Biblio-Link.

EDITING AND INSERTING RECORDS

Records brought in through Biblio-Link are fully editable in exactly the same way as those entered into Pro-Cite directly. From within Pro-Cite, in fact, the two kinds of records are indistinguishable. In the EDIT mode, records are presented one at a time, overlaid with the appropriate workform template. Field names are arrayed down the left side of the screen in typical database style, while the actual data values are written out next to the field names. A secondary horizontal menu bar at the bottom of the screen allows the user to scroll forward and backward through the database. To change any of the data on the currently-displayed record, the user selects the Edit option from the horizontal menu bar. The cursor will be placed at the beginning of the first field, with full-screen editing now available. A full complement of editing functions is provided, including block copies, moves, and deletes. When editing is complete, the user can select the Format option from the horizontal menu. A window will open and the record will be written out, almost magically, it seems, in perfectly formatted and punctuated style.

To enter a brand-new record into the database, one must first select an appropriate workform, and then choose the Insert option from the horizontal menu to bring up a blank inputting template for the selected workform. There are twenty workforms to choose from, providing coverage for just about every conceivable form of material. Additionally, one has the option of designing two inputting templates of one's own. Since all fields in all workforms are variable in length, there is never a concern about being constrained by a premature end-of-field marker. A single database, it must be emphasized, can be made up of records representing any number of different workforms.

SEARCHING THE DATABASE

Search routines in Pro-Cite are powerful, easy to use, and reasonably fast, even on floppy disk drives. A search string is entered into a search window; as the search progresses, a count will be given of the number of records searched, as well as the number of hits. The asterisk can be used as a truncation operator at either the beginning or the end of a search string, and phrases may be searched by placing them in quotation marks. The logical operators, AND, OR, and NOT, may be used, as well as parenthesized groupings. By default, searches are made on all fields; alternatively, they can be limited to specific fields, as follows:

ti# = "cost" or index = "cost"

Whatever records are retrieved by a search then become the SELECTED records, and most further actions, like formatting or printing, will act just upon this set. These selected records, in turn, can be searched, causing a new set to be created. It should be noted that only the current set is retained, although intermediate sets can be saved to a new Pro-Cite database. When a current set has been SELECTED, the records may be viewed in an abbreviated form in the BROWSE mode or in their fully formatted and punctuated form in the FORMAT mode. Movement back and forth among these different modes is simple and intuitive, requiring the press of just a single key.

When records are being brought into a database from multiple sources, there is likely to be a problem with duplicates. Fortunately, Pro-Cite has a DUPS option, which will search the database for what seem to be duplicate entries.

Items so identified are presented to the user for confirmation. We found this utility to work well.

FORMATTING RECORDS

Pro-Cite demonstrates its scholarly orientation in the formatting options it offers the user. By default, citations will be formatted according to ANSI bibliographic standards. Other formats provided are those of the Modern Language Association, the American Psychological Association, and *Science* magazine.

It is quite astonishing to see, at one moment, your data arrayed, field by field, in an editing template, and then to select the FORMAT option on the menu and see the citations instantly take shape as immaculately formatted and punctuated bibliographic entries.

It is quite astonishing to see, at one moment, your data arrayed, field by field, in an editing template, and then to select the FORMAT option on the menu and see the citations instantly take shape as immaculately formatted and punctuated bibliographic entries. The agony and tedium of actually typing out a bibliographic citation should never be visited upon anyone again.

As a nice added feature, Pro-Cite allows advanced users to design their own style sheets or formats. This is done using a standalone utility called STYLE.COM. With a little practice, one should be able to format records in just about any manner desired. Fields can be chosen selectively and printed in any order, and text and/or punctuation can be specified before or after any field. To go full circle, one should be able to design a format that exactly duplicates a BRS record, with field tags and all. There is no limit to the number of style sheets that can be created and saved. The same data, of course, can be used with multiple style sheets.

The output from any of the standard or custom formats can be sent to the screen, the printer, or a disk file. This last is a straight text file, enabling the formatted records to be brought in to a word processor and incorporated into a report or other document. Thus ends the long journey from a BRS database to an entry in a client report; and not a word has had to be re-typed.

CONCLUSION

We believe the Biblio-Link/Pro-Cite combination to be a powerful, versatile package for the information professional who wishes to build a local database with downloaded records, or who needs to re-organize and repackage downloaded records for client reports. The products are sensibly designed, easy to use, and solid. With tools like these, the information business will never be the same.

FIGURE 1

DOWNLOADED SEARCH FROM MEDLINE, REFORMATTED WITH BIBLIO-LINK/ PRO-CITE

Pro-Cite allows several format options, including the numbering and short heading seen in this example.

Bibliography for: Dr. Smith

1. Barnes, D. M. Grim projections for AIDS epidemic [news]. Science. 1986 Jun 27. 232(4758). P 1589-90. Note: 86235452. 8609.
2. Barrett, T. AIDS myths. Calif-Nurse. 1986 May. 82(4). P 5. Note: 86189166. 8608.
3. Beardsley, T. More US funds for AIDS [news]. Nature. 1985 Aug 1-7. 316(6027). P 384. Note: 85268037. 8500.
4. Berger, R. Cost analysis of AIDS cases in Maryland. Md-Med-J. 1985 Dec. 34(12). P 1173-5. Note: 86091334. 8604.
5. Budiansky, S. AIDS. More money promised [news]. Nature. 1983 Jun 2-8. 303(5916). P 365. Note: 83219223. 8300.
6. Budiansky, S. More AIDS money [news]. Nature. 1983 Aug 25-31. 304(5928). P 677. Note: 83297664. 8300.
7. Burda, D; Powills, S. AIDS: a time bomb at hospitals' door. Hospitals. 1986 Jan 5. 60(1). P 54-61. Note: 86083768. 8604.
8. Culliton, B. J. AIDS amendment angers cancer institute [news]. Science. 1984 Nov 30. 226(4678). P 1056. Note: 85040404. 8500.
9. Features of a selected group of Canadian patients with AIDS. Can-Med-Assoc-J. 1985 Nov 1. 133(9). P 890-1. Note: 86027553. 8602.
10. Firshein, J. AIDS funding decisions lack consensus opinion. Hospitals. 1986 Jan 5. 60(1). P 35. Note: 86083763. 8604.
11. Firshein, J. AIDS stretching VA's ability to treat veterans. Hospitals. 1986 Feb 20. 60(4). P 33-4. Note: 86110081. 8605.
12. Firshein, J. DC insurers barred from testing for AIDS. Hospitals. 1986 Jul 5. 60(13). P 50, 52. Note: 86249205. 8610.
13. Forstein, M. The psychosocial impact of the acquired immunodeficiency syndrome. Semin-Oncol. 1984 Mar. 11(1). P 77-82. Note: 84196504. 8400.

►

SOFTWARE SPECIFICATIONS

Basic Description:

- Pro-Cite: A specialized database management system which maintains bibliographic citations; a successor to The Professional Bibliographic System.
- Biblio-Link: A conversion utility which transforms records downloaded from an online search into a form usable by Pro-Cite.

Producer:

Personal Bibliographic Software, Inc.
P.O. Box 4250
Ann Arbor, MI 48106
313/996-1580

Hardware Requirements:

IBM PC, XT, AT or 100% compatible, with at least 256K of memory; DOS 2.00 or higher. Two floppy disk drives, or one floppy disk drive and a hard disk, are required.

Copy Protection:

Pro-Cite is copy protected; Biblio-Link is not

Availability:

Pro-Cite is available now. Biblio-Link had a new version for BRS available at the time of writing, with similar new versions in preparation for DIALOG and OCLC.

Price:

Pro-Cite—$395
Biblio-Link—$195 for each databank

THE AUTHORS

NORMAN HOYLE is an Associate Professor in the School of Information Science and Policy, State University of New York at Albany. He teaches courses in microcomputer database management and is currently working on a book dealing with bibliographic and textual applications using dBASE III.

KATHLEEN McNAMARA, a former librarian, is an Associate Programmer/Analyst in the Computer Systems Management/Data Processing Group, New York State Department of Health. She frequently downloads BRS searches, reformats the records, and delivers the results electronically via the Department's office automation system.

Communications to the authors should be addressed to Dr. Norman Hoyle, School of Information Science and Policy, State University of New York, Albany, NY 12222; 518/442-5110.

DIALOGLINK: A REVIEW OF DIALOG'S SEARCH ASSISTANCE SOFTWARE

by Joanne Witiak
Information Specialist
Rohm and Haas Co.

Using a microcomputer to access the vast world of dial-up information requires a software package to control the communications connection between the microcomputer and the dial-up computer. Functions that might be handled by the software include automatic login, sending of text created offline (uploading), capturing of text (downloading), output editing and formatting, accounting and record keeping, database selection assistance, strategy formulation assistance, and command mapping (universal command language). Available software packages can be broadly divided into two categories including: general purpose communications packages such as CROSSTALK XVI, SMARTCOM II, PC-TALK III, or QMODEM; and, specialized packages designed with specific databases, online services, or online searcher needs in mind. Examples of the latter kind include MicroDISCLOSURE, Search Helper, WILSEARCH, Sci-Mate, SearchMaster, and DIALOGLINK. The examples given are only a few of the software packages available on the market today. The user's needs will determine the package most suitable in that user's environment.

WHAT IS DIALOGLINK?

DIALOGLINK is the search assistance software component of DIALOG Information Service, Inc.'s integrated information network. The other components are online retrieval services via DIALOG and Knowledge Index, telecommunications via DIALNET, and electronic

The complete DIALOGLINK package includes a 12 chapter manual with index, Communications Manager Disk and back-up, and Account Manager disk.

The goal is one stop shopping for all. DIALOGLINK is designed especially for, but not limited to, accessing DIALOG (version 2), DIALMAIL, and Knowledge Index.

mail via DIALMAIL. The goal is one stop shopping for all. DIALOGLINK is designed especially for, but not limited to, accessing DIALOG (version 2), DIALMAIL, and Knowledge Index.

WHAT DOES DIALOGLINK PROVIDE?

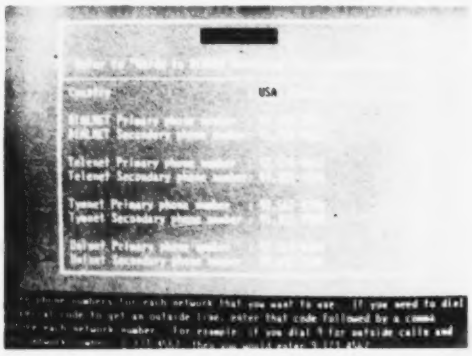
Automated Login:

Logging in is the first step in accessing a dial-up service. While not difficult, it requires remembering phone numbers, telecommunications network protocols, service "addresses," and passwords. If the login is not successfully negotiated, then the joys of telecommunication quickly turn into frustration.

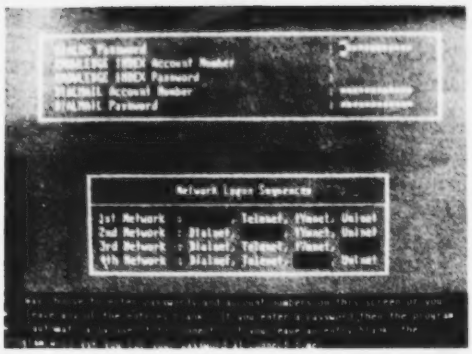
DIALOGLINK provides one-step logon. Preconfigured parameters are provided for DIALOG, Knowledge Index, and DIALMAIL and the communications networks DIALNET, Telenet, TYMNET, and UNINET. Passwords are masked so they don't show on the screen or printouts.

Offline Creation of Input (Uploading):

Using the type-ahead buffer, strategies or messages can be created prior to connecting and then sent automatically after connecting. The user saves typing time, which means money. The DIALOGLINK editor allows you to add, change, or delete letters, words, or lines.



Through the Configure program, a telephone directory is established for accessing DIALOG Services.



Through the Configure program, passwords are input (masked) and the network dialing sequence is established. DIALOGLINK will rotate through phone numbers until a connection is established.

If you prefer, you can create your input using word processing software, provided you can create straight ASCII files. The file should have the extension .SRC. Input saved on disk can be used repetitively (for example, SDI strategies or search term hedges).

Scrolling the Screen:

All information that passes across the DIALOGLINK screen passes into the retrieve buffer. At any point, while connected or offline, you can use the cursor movement keys to move around the buffer. The program status line at the bottom of the screen indicates the percentage of the buffer that is full. The size of the retrieve buffer is limited by the random access memory (RAM) capacity of your computer. When the buffer reaches 100%, the earliest information disappears. However, at any point in the session you can print on paper or save to disk the receive buffer contents, thus clearing the buffer and making room for more information.

Printing and/or Saving to Disk with Edit Capability:

The information in the retrieve buffer can be printed to paper or saved to disk during the online session or after logging off. The retrieve buffer can be edited to some extent within DIALOGLINK. Lines that you wish to keep can be marked using the on/off mark key (F4). If you want to edit via word processing software, the save files are straight ASCII files with the extension .REF.

Accounting:

DIALOGLINK includes capabilities for pro-

ducing a title page and session invoice for a search session. Prior to logging in, the accounting option is selected from the session menu (F9). Information is filled in for the appropriate forms. The title page can be printed now or at the end of the search. At the end of a search session, the accounting session is closed and a search session invoice can be printed. Some users might wish that the invoice could be sent to a disk file where it could be edited to add overhead charges, etc. Currently that is not possible.

If you desire to cumulate accounting information on a periodic basis, for preparation of reports by client name, charge code, searcher, or database, you will need the Account Manager as well as the Communication Manager.

THE FIRST ENCOUNTER

DIALOGLINK comes in an attractively packaged black vinyl box with the manual in a 3-ring vinyl binder. You receive the Communication Manager and a back-up disk. If you purchase the Account Manager, you receive a disk for that as well. If the beauty of DIALOGLINK reminds you of Menlo's (recently sold to Personal Bibliographic Software) In-Search/Pro-Search, you might also notice the first screen copyright statement indicates "portions of this software product are copyright© Menlo Corporation 1985."

The DIALOGLINK manual includes a quick start chapter which is one page. From the DOS prompt, you run the Configure program. Configure defines the computer you are using, the drive assignments to be used by the program, the modem type, the network phone numbers and the sequence in which you want them to be tried, and your DIALOG password. There are defaults where appropriate and configuring can be a very quick process. If all does not go well, there is a 12 page CONFIGURE chapter. If your equipment is nonstandard, you can get into difficulties that the detailed chapter does not help with.

I tried to load DIALOGLINK onto my hard disk (which is allowed). Everything went into my root directory rather than the subdirectory I had created. Later I realized I needed to change the custom drive assignments during the configure process. I was a little nervous as I read that the copy protection scheme allows only one installation to a fixed disk. However, I managed to properly de-install and re-install DIALOGLINK to my chosen subdirectory.

I also had been using a Microcom ZX/2400 baud modem. It was not on the list of selected modems so I chose the option "other," I was left to input some information without guidance as to proper response. I took the easy way out and brought in a Hayes Smartmodem 1200. It was on the list and with that equipment I had no problem using DIALOGLINK. I did have a problem upon leaving DIALOGLINK and trying to use another communications program on my hard disk. It appears that DIALOGLINK does something to the modem. Resetting or turning the modem off and back on seems to solve the problem.

DIALOGLINK STRENGTHS

DIALOGLINK features that I liked best include the ability to scroll the screen. This is especially important if you do not print simultaneously. Not all communications packages have this feature.

I was delighted with the type-ahead feature. I have often found myself waiting impatiently for the prompt to input the next line. The type-ahead feature allows you to type whenever you want, even as DIALOG is printing out results.

The ability to recall and edit the last line sent is also a feature that acknowledges the way it is in real life. I can't count the number of times that OR came out OE and wasn't noticed until I saw zero postings for the set. With DIALOGLINK, you can recall the last line sent to the type-ahead buffer, cursor-edit it, and send it again.

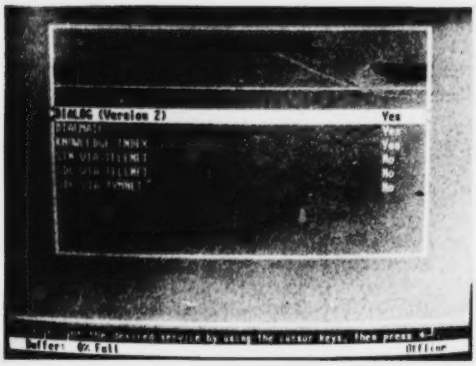
I was planning to use DIALOGLINK with a 2400 baud modem. If I had gotten that to work (I am sure there is a way) there still was not a facility to include 2400 *and* 1200 baud numbers in the same dialing directory.

DIALOGLINK WEAKNESSES

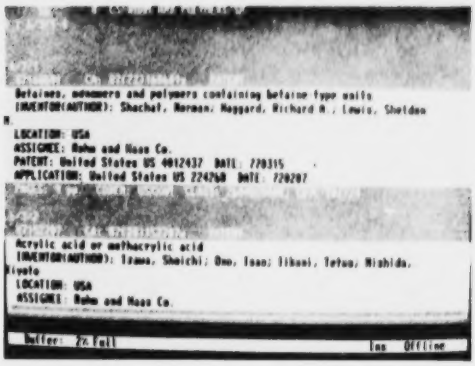
I was planning to use DIALOGLINK with a 2400 baud modem. If I had gotten that to work (I am sure there is a way) there still was not a facility to include 2400 *and* 1200 baud numbers in the same dialing directory.

DIALOGLINK has the ability to support other online services, however, not nearly as conveniently. Each time another service is entered, you have to enter a phone number and logon protocol information. Thus if you use the same service over several telecommunications networks, you will find yourself making repetitive entries in the Configure program. The type-ahead feature can only be supported for other services which have uniform prompts.

The accounting feature is also not available for other services. ►



Additional services can be added to the Online Services Directory through the Configure program. For additional services, an entry must be made for each communications network. Type-ahead is not possible for services without a uniform prompt.



The contents of the retrieve buffer can be marked (F4) for selective printing on paper or saving to disk. The program status line shows the percent of buffer filled, that the insert mode is active, and the connect status.

WHO SHOULD BUY DIALOGLINK?

DIALOGLINK is best suited for people who search primarily DIALOG services. It is attractive, it is easy to use, and it has been designed with the online searcher in mind.

DIALOGLINK operates on IBM PC, PC/XT, PC/AT, Compac or other IBM-compatible computers. At least 256K of RAM, DOS 2.0 or higher, and two double-sided disk drives or a fixed disk system with at least one floppy are required. Hayes Smartmodems as well as ten other modems and any acoustic modems are supported. DIALOGLINK will work with color or monochrome monitors.

The complete DIALOGLINK package costs $125. The Communications Manager may be purchased separately for $95 and the Account Manager is priced separately at $45.

An evaluation disk which will operate for two hours of online usage (customer's own password) and includes both the Communications and Account Manager is available for $10.

For futher details contact DIALOG Information Services, Inc., 3460 Hillview Ave., Palo Alto, CA 94304, USA.

THE AUTHOR

JOANNE WITIAK is currently an information specialist with Rohm and Haas Co. in Spring House, PA. She specializes in technical information retrieval and has been a member of the Library and Information Services Department of the Research Division since 1976. Joanne received a B.S. in chemistry and an M.S. in organic chemistry from Iowa State University in 1971 and 1972 respectively. In 1979 she received an M.S. in information science from Drexel University. She has been actively involved in the growing field of online information retrieval, serving as chairperson of the Philadelphia Section, Chemical Information Group, American Chemical Society, and also the Special Interest Group on Biological and Chemical Information of the American Society for Information Science. Joanne also serves as a Drexel University adjunct faculty member, teaching a graduate course titled "Online Bibliographic Searching."

Communications to the author should be addressed to Joanne Witiak, Information Scientist, Rohm and Haas Co., 727 Norristown Rd., Spring House, PA 19477; (215) 641-7820.

NUTSHELL: A SOFTWARE REVIEW OF A FILE MANAGER

by Brian Phillips
Systems Librarian
U.S. Naval War College

INTRODUCTION

The NUTSHELL Information Manager is, in a nutshell, an easy to learn, easy to use, powerful file management system. Among the plethora of database management packages designed for the IBM PC and compatibles, NUTSHELL's price/performance ratio makes it stand out in the crowd.

Anyone who has tried to squeeze a bibliographic record into the limited field and record size of most database management programs will appreciate the lack of constraints NUTSHELL places on its users.

Anyone who has tried to squeeze a bibliographic record into the limited field and record size of most database management programs will appreciate the lack of constraints NUTSHELL places on its users. The maximum characters per field, characters per record, fields per record, records per file, number of key fields, and number of fields in a sort are all virtually unlimited. The only real size limitations are those imposed by the microcomputer's memory and storage.

The program consists of two disks; a tutorial and a master. The installation process is easy and the manual takes you through the process step-by-step. The master disk consists of only two files and is not copy-protected so there are no special procedures required for installation on a hard disk. The tutorial program steps you through each major function of NUTSHELL with interactive prompts and will not allow you to make a mistake. Anytime you enter the wrong command the machine beeps and the program will not allow you to continue until you get it right.

Setting up and creating a database with NUTSHELL is easy and straightforward. If you have used a database management program and you have run through the tutorial disk you can probably create a NUTSHELL database without consulting the manual. The **HELP** command is always available from any menu and its pop-up windows are context-specific to the option in use. Unlike dBASE II and other complex database managers NUTSHELL never leaves you staring helplessly at a blank screen. Each of the main menu options is always available and displayed at the bottom of the screen while in the Browse screen. The "Browse" screen is NUTSHELL's main menu screen from which records are viewed and all other options chosen. Menu options are chosen by pressing the F2 key which brings the cursor to the first option at the bottom of the screen. You then use the left and right arrow keys, or type the first letter of the command, to move the cursor to the particular option desired. For speedier operation you can bypass the menus altogether by pressing the **ALT** key and the first letter of the command. You can return from any menu screen in the program to the Browse screen by using the **ESC** key. The **ESC** key also serves as a safe escape should you wish to cancel a command.

NUTSHELL automatically backs itself up every 60 seconds while the program is operating so that even a power failure has little effect.

NUTSHELL's use of the IBM keyboard is so well thought out that you are never left wondering what key to push. The function keys are consistent throughout the program, so what works in one menu works in all menus with no unpleasant surprises. If you do hit the wrong key, the program informs you with a beep or with the display of one of the 62 screen mes-

►

sages. NUTSHELL automatically backs itself up every 60 seconds while the program is operating so that even a power failure has little effect. A keyboard overlay is provided; however it is unnecessary after you have become familiar with the program. All functions are menu-driven with separate menu options provided for each program function. From the main menu the options "Define," "Layout," and "Add" are used to create the field and record formats and to add data. Once a database has been created and the data keyed-in records can be searched with the "Find" option, edited with the "Modify" option, deleted with the "Delete" option, and sorted with the "Sort" option. Printed reports and output to other file formats are produced with the "Print" option. NUTSHELL uses the same screen layouts for many of the different functions providing a consistent interface throughout the program.

CREATING A DATABASE

The first step in creating a NUTSHELL database is to define the fields. This requires you to chose a field name (up to 19 characters) and the field type. Field types include: text, number, date, calculations and summary. The Define function allows you to define a field as a calculation field and with the Reformulate command the program will automatically show how a change in value in one field will affect other fields. In effect, it allows you to do simple "what if" analysis like an electronic spreadsheet.

Once the fields have been defined, the record layout must be created. When the Layout option is selected the program creates a layout screen with the field names arranged in the order in which they were defined and with program default field lengths of 50 characters for text fields and 15 characters for numeric fields. This ready-made layout screen can then be rearranged by moving the fields around and placing them in any order anywhere on the screen. The field size can be made any length (except that date and number fields cannot be more than one line). The field and record size is not engraved in stone and if you should discover,

if you should discover, after adding 100 records, that you actually need a larger field size, NUTSHELL will allow you to modify the layout without reconstructing the entire database.

Announcing:

Pro-Cite™ – the database system designed especially for information professionals.

Whether you're a professor, librarian or researcher, you know what it's like to struggle with the "general-purpose" database system. **You have special needs** - so why settle for a "generic" database system? With Pro-Cite, you never have to worry about defining the length of a field, or deciding which fields you might want to include. **Pro-Cite™ was designed with your needs in mind.**

- Variable length fields for the most complex bibliographic references
- Twenty-two document types for data entry, including two user-defined workforms
- Full-text Boolean searching–unlimited key word searching
- Sorting on all fields
- Customized bibliographic formats through a menu-driven user interface

More than just another database system—you'll be "raven" about it!

Pro-Cite is The Professional Bibliographic System, version 3. Available for the IBM-PC line and compatibles. Call or write for more information.

Personal Bibliographic Software, Inc.

P.O. Box 4250, Ann Arbor, Michigan 48106 (313) 996-1580

after adding 100 records, that you actually need a larger field size, NUTSHELL will allow you to modify the layout without reconstructing the entire database. If your record length is more than one screen long, the screen can be scrolled up and down through the record. The number of different record layouts that can be created and saved is unlimited.

Once the record layout is completed, you are ready to add the data to the records. When you select the "Add" option a blank record with the field names and the record layout you created is displayed. Adding records is basically "fill-in-the-blanks" with the benefit of a full-screen editor with automatic word-wrap and highlight capability. The total number of records you have added to the database is displayed at the top of the Browse screen. NUTSHELL provides no data-entry checking for numbers only or characters only, or for must-enter fields. An authority control-like function is provided by the "Show Index" option which lists in a pop-up window every term previously used in the selected field. Unfortunately, the index is of limited use because it only shows each word in the field and not the entire field; so a check of the index in an author field might show that "Smith" has been used four times but the individual records must be accessed to determine the "Smiths" first names.

DATABASE MANIPULATION

To construct a search with NUTSHELL you choose the Find option and a record layout with blank fields identical to the "Add Records" screen appears. You construct a search by positioning the cursor within the field to be searched and entering a word, a portion of the beginning of a word, a phrase, a date, or a number. Once the search criteria is entered the program executes the search by looking at the selected fields in every record for a match. Each record found can then be browsed by using the **PgUp** and **PgDn** keys to view the records. In narrowing a search you can construct the search on multiple fields and a range of records can be found using such qualifiers as "less than", "greater than", "equal to", and "between." If, for example, you were looking for all books by Johnson or Johnston written after 1945 you would enter "Johns" in the author field and ">1945" in the date field.

Editing a NUTSHELL record is as easy as editing with a word processor. A record is edited by choosing the Modify option and then editing the record with the full-screen editor. Unfortunately, global editing of the database is not possible.

NUTSHELL can sort the database on any and all fields. To sort the entire database, or the records of a previously constructed search, you chose the Sort option from the main menu. A screen identical to the Define screen appears and you are prompted to enter the order in which the fields are to be sorted and whether the fields are to be sorted in ascending or descending order. A major drawback for library applications is NUTSHELL's inability to sort alphanumerically on a field. A field must be defined as either a textual or a numeric field, but it cannot be defined as both. So the program will not sort by Library of Congress type call numbers or report numbers that have both characters and numbers.

NUTSHELL's Print function is adequate for printing reports which are frequently used, but it is cumbersome for creating ad hoc reports. A separate layout screen must be created for each report that is to be printed. If you want to print reports consisting of full cataloging records, short citations without field names, and a listing of all authors used in the database, three separate layout screens must be created. The Print screen is divided into two parts. The record layout is displayed on the left side of the screen and print controls which establish the headers, footers, and spacing, are on the right. The print controls do not allow for empty spaces to be suppressed while printing so that unused fields, and the spaces between fields, remain in the printed report as blank spaces. This lack of printing control takes away from the finished appearance of the reports. The complete database, or portions selected through a search, can be output to a printer or to an ASCII, dBASE II, DIF, Leading Edge word processor, or NUTSHELL formatted file. NUTSHELL supports the IBM/Epson printer and a dozen other printers.

DOCUMENTATION

The NUTSHELL manual is clear, concise, and well illustrated. The manual is adequately indexed and has tabbed pages for quickly locating every major program function. The manual's binding is designed so that the manual can stand by itself and the pages can be conveniently flipped with one hand. The only minor flaw that can be found is the manual's organization. The manual's "Screen Options" section is not organized in the logical order in which you would use it. For example, the Define and Layout sections which you would use first to create the database are the last two options in the section. The manual goes to great lengths to walk you through setting up a database. With the use of the tutorial disk, the keyboard overlay, the pop-up help screens, and the manual, even a computer neophyte should have no trouble using this program. If you should need further assistance, Leading Edge has a toll-free "Help Hotline." ►

CONCLUSION

NUTSHELL is one of the better file managers on the market for the IBM PC, especially in relation to its price. It is certainly one of the easiest to use. NUTSHELL is a file manager, however, and not a relational database management system such as dBASE II/III. It is not suitable for all database applications. It works with one file at a time and cannot link data from multiple files. If you are creating a simple database where all the information you need is contained in one file of records, then a file manager is adequate. If you are creating multiple files such as a file of patron records and a file of cataloging records and you will want to extract "relations" from each file (how many times a certain book has been checked out by a certain patron) you are better off with a full relational database management system. With both types of programs there are tradeoffs. With the power and speed of a relational database manager you get complexity and rigid field and record length requirements. With a file manager you get ease of use but it lacks the power and speed of the relational database manager.

NUTSHELL's ease of use and text handling capability does create a tradeoff in speed. Because of its many menus and extensive indexing, NUTSHELL requires frequent disk access and is consequently slow in executing multilevel searches and sorts against a large database. With any database management program a floppy disk drive simply does not have enough capacity to handle a database capable of storing the large number of records a library typically maintains, especially if they are full bibliographic records. *With NUTSHELL a hard* disk drive is a necessity, not only for data storage *requirements, but also for response time.* A hard disk drive typically accesses data at ten times the speed of a floppy disk drive and this factor makes a big difference in a 5,000 record database. NUTSHELL can store approximately 200 records that average 400 characters in length on a 360kb diskette, and a 10mb hard disk will hold about 5,000 records.

NUTSHELL's strong points are its ease of use, its price, and—especially important to librarians—its ability to handle large text fields. If your needs can be met with a file manager, NUTSHELL is worth your time to try. Leading Edge provides a free demonstration diskette which will give you a good idea of the program's suitability for your specific needs.

SYSTEM SUMMARY

NUTSHELL Information Manager
(Version 1.29)

Leading Edge Products, Inc.
225 Turnpike St.
Canton, MA 02021
(617) 449-4655

IBM PC and compatibles with 256kb minimum
One disk drive required

List price $150, (discounted $55-85)

FIGURE 1. NUTSHELL's Browse screen is used for viewing database records and is the main menu screen for choosing all program functions.

F1: Help F2: Menu Browse 200 records Pg↑↓

CN QA 76.5 .S55 1985

AU Smith, John Q.

TI Microcomputers and librarians, or, How do I plug this damn thing in?
ED 1st ed.
PL Boulder, CO: PB Mountain Press,
DT 1985. PD ix, 235 p.: ill. ; 24 cm.
SR (Microcomputing in libraries series)

NT Bibliography: p. 233-235.

AE 1. Microcomputers. 2. Libraries—Automation. 3. Librarians—Social life and customs. I. How do I plug this damn thing in.

_Find _Add _Modify _Delete _Sort _Print _Layout _Define

Communications to the author should be addressed to Brian Phillips, Systems Librarian, U.S. Naval War College, Newport, RI 02841, telephone (401) 841-4307.

MODEM7 AND DOWNLOADING

by Paula Hane
Reference Librarian
State University of New York
College at Purchase

In two previous articles on public domain software I covered some important disk utility programs (*Online*, Sept. 1984) and two handy applications programs (*Online*, Jan. 1985). No treatment of the treasures of public domain software would be complete without a proper look at **MODEM7**, the popular communications program. By way of an introductory tribute, I will borrow from Arthur Glossbrenner's book, *How to Get Free Software* (St. Martin's, 1984, p. 353).

> MODEM7. . .is the paradigm of public domain software. Thousands of hours have been spent on its development. Scores of skilled programmers have generously donated their time and creativity to adding features and improvements, fixing bugs, and producing versions compatible with nearly every brand of computer. As it exists today, MODEM7 is on a par with many commercially available communications programs. But in the best public domain tradition, it's yours free for the asking. There is no finer example of "computer power to the people" than MODEM7.

Several years ago I started out as a novice with my new modem and a communications package that came with it. My experience with poring over a poorly written manual, and many telephone calls to remote online systems trying to figure out what was happening, is probably typical of new users, at least judging from the calls for help we've received since then from friends doing the same. I am writing this article to share with you what I wish I had known. I intend to provide only the amount of information that the average user needs. A simple terminal, either CRT or printing, plus a modem and telephone, can be used to communicate with other computers, access online databases, send messages, etc., but, if a microcomputer is used so that the session or files from the other computer can be saved for later use, some kind of communications program is necessary. There are numerous books and articles which describe and evaluate commercial communications programs, and the capabilities and features, and of course, price, can vary considerably. The user deserves to know about a program like MODEM7, which is both excellent and free.

WHAT IS "MODEM7"?

The most important feature of a communications program is the ability to transfer files accurately over the telephone lines. Ward Christensen of Chicago is not only known as the contributor of many useful public domain programs, but is rightly famous for writing the program, called MODEM, which handled the accurate transfer of program (binary) files. The set of rules for how a file is transferred is known as a "protocol," and "Christensen's protocol" is called the XMODEM protocol, and is used by his MODEM program. "XMODEM" is also the name of the companion program found on remote computers (more on this later). As Glossbrenner pointed out, the original MODEM program was then modified and augmented with features by Christensen and others, and almost ten years later, is known as MODEM7 (version 7). Extra numbers indicate minor revisions or special features, for example, MODEM712 is MODEM program, version ►

7.12. The program has been adapted for special modems, such as SMODEMxxx for the D.C. Hayes Smartmodem, and for specific computers, such as MD730OS1 for the Osborne 1.

The average user does not need to understand HOW a transfer protocol works; the program takes care of it automatically. Briefly, the XMODEM protocol uses something called "cyclic redundancy checking," "CRC," which checks to see if blocks of information are sent correctly to the receiving computer, and if not, resends the block. With this, or any other protocol, both computers must be using the same protocol, though not necessarily the same communications program.

The one thing microcomputer users should understand is the difference in files that might be sent and received, specifically the difference between a file in ASCII (American Standard Code for Information Interchange) format versus one in binary form.

The one thing microcomputer users should understand is the difference in files that might be sent and received, specifically the difference between a file in ASCII (American Standard Code for Information Interchange) format versus one in binary form. I used to be easily confused in this matter, but an easy way to distinguish is, if the file exists in a form that you can read as text on your screen, then it is an ASCII or text file. A program file, such as one written in BASIC can be an ASCII file also, IF it is readable. Binary files, on the other hand, cannot be read, since they are stored as machine language (1 and 0). The XMODEM protocol will transfer both ASCII and binary files. Other protocols now exist which allow error-free transmission of binary files, but MODEM protocol is the most well-known and widely used.

DOWNLOADING—WHAT AND WHERE

The term "downloading," simply put, means the transfer "down" to your computer of files or information, from another computer. In reverse, "uploading" is to send files "up" to another computer, directly from your computer. Recent versions of MODEM7 can be the communications key for downloading from databanks, from computer bulletin boards, or from other microcomputer users.

I will not cover CompuServe, The Source, or similar databanks here, since that could be an entire topic in itself, and is already written about frequently in the popular microcomputer literature. (See also the Glossbrenner book cited earlier.) Many microcomputer users are unaware of the existence of personal computer bulletin board systems and remote CP/M systems, and the tremendous possibilities they offer. The original bulletin board system (CBBS) was set up by Ward Christensen and Randy Suess in Chicago in 1978. Similar bulletin board programs for CP/M and other operating systems were written and systems using them proliferated across the country. Some of the best known systems are the ABBS (Apple Bulletin Board System) and the PMS (People's Message System) for the Apple II, Forum-80 for the TRS-80, AMIS for the Atari 800, RBBS-PC and HOSTCOMM for the IBM PC. The primary intent of most bulletin boards is the exchange of messages and information. Many also make public domain software available for downloading. A remote CP/M (RCP/M) system allows the caller to actually run the remote computer using CP/M operating system commands, and the primary purpose is the exchange of public domain programs. Some RCP/M's also have a bulletin board system attached, but the emphasis is generally on software, rather than messages. The RCP/M's tend to have fewer menus and user-friendly features than the bulletin boards, and unless you are fairly proficient in the CP/M operating system, you should probably stay away from them. Later in the article I will discuss how to locate bulletin boards and RCP/M's, and also how to obtain MODEM7, but first, let's see how it works.

USING MODEM7

With so many versions of MODEM7 around, you might think it impossible to talk about using "the" program; however, the versions do have basic functions in common. ALWAYS read the accompanying documentation file carefully for the version you have. For this example of using MODEM7 I will use a local RCP/M that I call which has a bulletin board system (RBBS). You must have a version of MODEM7 configured for your computer (more on this later), and a modem connected to your computer and to the telephone line, (or an acoustic coupler). To record the session, and/or download files, you should have at least one properly formatted blank disk. If your modem is hardware controlled by switches, set your parameters to 300 or 1200 baud (if allowed by your modem), and full duplex. If your modem is software controlled, then the version of MODEM7 that you use must support your specific modem. Put the disk with MODEM7 in the

A drive and your blank disk in B. Older versions of MODEM7 gave no prompts to the user, but most recent versions now will begin with a menu, or tell the user to type **M** for menu when the program begins. The menu is usually a three or four page help screen listing commands. This is the menu from my version of MODEM7.

Single Letter Commands

? – Display current settings
^ – Function key intercept character, then (0-9)
M – Display the menu
E – Terminal mode with echo
L – Terminal mode with local echo
T – Terminal mode
For copying text to disk use T (or E or L) FILENAME.TYP
Start or Stop toggles described on subsequent screen.
R – Receive CP/M file using Christensen Protocol
S – Send CP/M file using Christensen Protocol
COMMAND: R (or S) FILENAME.TYP
R and S can use the following subcommands:
B – Bulk transfer using wildcards (e.g., *.*)
D – Disconnect when done, return to command mode
Q – Quiet mode (no messages to console)
V – View < R > or < S > bytes on console
X – When done, disconnect, go to CP/M

Three Letter Commands

CPM – Exit from this program to CP/M
DIR – List directory and space free (may specify drive)
ERA – Erase file (may specify drive)
LOG – Change default drive/user no. (specify drive/user) and reset disks.
e.g. LOG A0: or LOG B: (user # unchanged)
SPD – Set speed of file output in terminal mode
TIM – Select Baud rate for "time-to-send" message
TCC – Toggle CRC/Checksum mode on receive
TLC – Toggle local command immediate or after CTL
TLF – Toggle LF after CR in "L" or "T" mode for a disk file
TRB – Toggle rubout to backspace conversion
TXO – Toggle XOFF testing in terminal mode file output
NUM – List remote systems
SET – Set modem baud rate
BYE – Disconnect, then return to CP/M
CAL – Dial number
DSC – Disconect from the phone line

The following are terminal text buffer commands:

DEL – Delete memory buffer and file
WRT – Write memory buffer to disk file

Local Commands while in Terminal Mode

CTL–@ – Send a break tone for 300 ms.
CTL–B – Change Baud rate (PMMI only)
CTL–E – Exit to command mode
CTL–L – Send log-on message
CTL–N – Disconnect from the phone line
CTL–P – Toggle printer

CTL–Y – Start copy into buffer
CTL–R – Stop copy into buffer

Start & Stop may be toggled as often as desired. A ":" at start of line indicates buffer is copying. XOFF automatically used to stop input when writing full buffer to disk, XON sent to resume.

CTL–T – Transfer ASCII file to remote
CTL–^ – Send local control character to remote

►

I will not cover every command, since there are some I've never had to use. I will deal with the important commands, and users should check their documentation to find out about the others. Typing **M** will bring up the menu, but I like to have a printed copy next to me when calling. Type **?** to display the current settings. The important one to check is modem speed. If this needs to be changed, type the three letter command **SET**, and indicate the new speed.

If you are using an acoustic couple or a manual dial modem you will have to dial the telephone number yourself. When you have established contact with a high-pitched tone, press the return key twice until a sign-on message is received. If you have an auto-dial modem, and a recent version of MODEM7 which makes use of this feature, you use **CAL**, one of the three-letter commands, as shown in the above Menu. You can manually type the number to be dialed, or select the number from your phone directory, which is displayed to you. This phone directory can be customized with a companion program called M7LIB, which is wonderfully easy to use. My version of MODEM7 also offers a redial function, which is a desirable feature in communications software.

In my version, as soon as I make connection, I receive a message saying that I am in "Terminal Mode." This allows communication back and forth with the other computer. If your version does not do this automatically you will need to select **T** from the MODEM7 menu when you are at the Command level (i.e. when you see the "**COMMAND:**" prompt). If you are in Terminal Mode and would like to save the session or some of it, you need to temporarily exit from Terminal Mode, using CTL-**E** (control key plus E) to get to the Command level, then type **T B:FILENAME.TYP**, which will put you back into Terminal Mode, and allow you to save to the "B" drive in whatever filename you specify. Then, while connected to the other computer, and in Terminal Mode, you can use the start and stop toggles: CTL—**Y** (control key plus Y) will start saving copy to your buffer (allotted memory space in the computer), CTL—**R** will stop. When the buffer is full, the program will automatically take care of stopping input from the other computer temporarily, write the buffer contents to your disk, then resume copying. My version of the program also lets you know during the session when you are copying into the buffer by placing a semicolon ";" at the beginning of every line; a handy feature! One further explanation is needed about Terminal Mode: **T** is usually selected for dialing bulletin boards. **E** is normally selected when calling another personal computer running MODEM7 or a similar program, so that both parties can see what is being typed. The other computer usually should select **T**. **L** can be used by both computers in other situations as described in the documentation, and especially with main frame computers using half-duplex.

When you have established contact, the other system will usually ask some questions about you and your computer. If asked: **HOW MANY NULLS (0—9) DO YOU NEED**, type **0**. You may also be asked if your terminal can display lower case. Then, you may be asked your name, location and, in some cases, your password. Here is the log-on message and main menu from our local RCP/M with a bulletin board. The menu is similar to what you would find on bulletin boards in general, though they would not have the "Exit to CP/M" option.

Welcome to S.D.V. Computer Facility
The COMPLETE SYSTEM is on line 9 PM to 9 AM daily.

All OTHER TIMES system will be running on another computer and ONLY the MESSAGE SYSTEM and very limited software on line.

You can now set your own parameters on the system, such as UPPER or lower case, number of nulls needed, line feeds, and change of your password, through use of the "U" command. Once set, system will "Remember" the next time you call!

If you have questions, type CHAT upon entering CP/M and SYSOP will respond if available, otherwise you can leave a confidential comment to sysop while in the CP/M by typing "SYSOP,". Instead of entering RBBS P to leave comment.

You are caller # 14694
Last on line 01/28/85
There are 18 active messages
Next message will be 19
High message when you last called was 18

Function
B,C,D,E,G,H,I,J,K,L,M,N,O,P,Q,R,S,U,V,W,X,#
(or '?' if not known)??

```
Use Ctrl-K to abort, Ctrl-S to pause.

                    --  Functions supported:  --
C--> Toggle UPPER/lower case          N--> Set Nulls
D--> Toggle full/half duplex          O--> List other system numbers
E--> Enter a message                  P--> Prompt (bell) toggle on/off
G--> Goodbye (hang up)                Q--> Quick scan by subject
     --system prompts for comment     R--> Retrieve messages
H--> To obtain detailed RBBS          S--> Scans messages by sender, recipient,
     --command information                 subject, & date
I--> Display/search user list         U--> Store new user parameters
J--> Exit to CP/M                          or change password
K--> Kill a message                   V--> Toggle video/print backsp.
L--> Line Feed toggle                 X--> Toggle expert mode
#--> Display Msg No. info             ?--> Display this list

Commands can be strung together, using a semicolon as the delimiter. For example: R;22;35
retrieves message #22, followed by message #35. For forward sequential retrieval, use + fol-
lowing the message number. Example: R;3+

          --> For detailed command information, use the H command. <--
```

Notice the **H** option, "To obtain detailed RBBS command information." It is a good idea to check this the first time you call a new system, and make sure you have used CTL—**Y** so that you save all the information on disk. The session that you download can be edited with your word processor and then printed so you have all the information the next time you call. Remember, you are still in Terminal Mode of MODEM7 and you can use CTL—**P** to toggle your printer if you want something printed immediately. A number of the commands deal with the message function on the bulletin board, and, for ease-of-use, most are mnemonic: **R** for receive, **S** for scan, **K** for kill, **E** for enter. A message does not have to be directed to an individual, but can be a question about a program or your computer that anyone might respond to. Many bulletin boards will provide a list of other systems' telephone numbers, as this does by typing **0**. This is also a useful item to download to your computer. But now let's see what happens when we exit to CP/M.

```
  You are about to enter the CP/M operating system. If you are not familiar with CP/M, type
HELP when you see the "A0  " prompt.
  You can access any system command from any point in the system. However, commands
which call data files may not execute properly unless you are logged to A0.

--> BYE              <--Type this before you hang up
--> COMMANDS         <--Type this to see CP/M commands
                        allowed on this system
--> RBBS P           <--To get back to message system
--> SYSOP            <--To enter confidential comments to SYSOP
                        while in CP/M
Please hold on. . .Booting CP/M. . .
```

If this is the first time you have called, it is best to type **COMMANDS** to see what the system allows. Each system may be different, and may not be this user-friendly and provide a list. Some systems may tell new users to enter **TYPE HOWTO.USE** to view a file explaining features and commands.

```
                    COMMANDS used on this system:
A0 > DIR                      <--To get a directory of the A drive.
A0 > DIR B:                   <--To get a directory of the B drive.
A0 > DIR2                     <--To get a directory two (2) across.
A0 > DIR3                     <--To get a directory three (3) across.
A0 > XMODEM S FILENAME.TYP    <--To send a file to your system from this one
```

```
A0 > XMODEM R FILENAME.TYP   <-To send a file from your system to this one
A0 > HELP                    <-To enter the HELP program
A0 > CHAT                    <-To talk with a system operator, if available
A0 > TYPE                    <-To list a squeezed or ASCII file
A0 > RBBS P                  <-To re-enter the message module
A0 > USER 1                  <-To log to another user area (in this case User
                               1)
A0 > B:                      <-To log to the other drive (you MUST use the
                               colon)
A0 > SYSOP                   <-To leave a comment without going back into
                               the RBBS
A0 > FILE FILENAME.*         <-To locate a particular file on the system.
A0 > LUX FILENAME.LBR        <-To see the members of a .LBR file.
A0 > BYE                     <-To log off the system.
```

You are now in CP/M and facing the prompt **A0>**, which is Drive A, User area 0. A user area is like a partitioned section of a disk, and there can be up to 16. If you ask for a directory using DIR, you will only get the directory for the drive and user area you are logged onto. Unless you are already familiar with the size of a particular RCP/M's directory, I would not recommend this the first time you call. Directories can be huge and take an enormous time to view. Many RCP/M systems have a file called **DISKMENU.DOC** which summarizes files and locations on the disks. To obtain this and view it later at your leisure, make sure your buffer is open (CTL—**Y**), then enter **TYPE** DISKMENU.DOC. On some systems this file is in squeezed format (the file extension will be **.DQC**), and it can be viewed by entering **TYPESQDISKMENU.DQC**.

If you already know of a file that you would like to download, for example, the disk utility program I recommended called "unsqueeze" (**USQ.COM**), you must find the drive and user number location on the remote system. Most RCP/M systems will have some program for locating a file. A common one is **FILEFIND.COM**, which will look throughout the entire system. You would type **FILEFIND USQ?.***. By using the "wildcard extension," "*", you will find USQ.DOC, the documentation file, and any versions of the program including USQ.OBJ (which you would then rename on your system to USQ.COM). On some systems this program has the name FILE, rather than FILEFIND. Another program which is now found on some systems is the Super Directory Program, **SD.COM.** This program has a number of excellent features which I won't go into here, but it also will look for a file on all drives and user areas.

Once you have identified the location of the file you want, you need to use the file "XMODEM," located on the other system. Here I am referring to the file transfer program that you must use to allow the other system to send you a file. Notice that the command list above gives instructions on how to send a file. Most RCP/M systems are not this helpful. You should still be in Terminal Mode, and, if you have been saving the session to disk up to now, you should close your buffer, using CTL—**R**. Now, you are ready to download a file.

Type **XMODEM S USQ.OBJ**, remembering to precede the filename with a drive and user location if it is not on the same one you are logged to. You will receive a message something like:

```
File open: 296 (0128H) records
Send time: 22 mins, 46 secs. at 300 baud
To cancel: use CTL X
```

Then you need to exit from the Terminal Mode of MODEM7 to the Command Mode, by typing CTL—**E**. In my version of the program there is a message given when exiting from Terminal Mode that reminds me to write the buffer contents to disk, by typing **WRT**. Then you use the command to receive a file using Christensen (Modem) protocol, type **R B:USQ.OBJ**. You can name the file whatever you want on your system, and of course, send it to whatever drive you want, in this case, B. You will receive a message:

```
File open, ready to receive
CRC in effect
Received # _____
```

The two systems will then take over the transfer, and you will see the numbers changing on your screen as blocks are received. The MODEM7 program writes everything to your disk automatically when the buffer is full. You will then receive a message that the file transfer is complete. Then, type **T** to return to terminal mode. You will still be in CP/M on the remote system. You may then transfer another file, return to the message module, in this example by typing **RBBS P**, or exit the remote system by typing **BYE**. After exiting, type **BYE** or **CPM** to leave MODEM7. Now you can have the fun of reading the documentation and running the program you just transferred.

QUICK REFERENCE TO SAMPLE SESSION

MODEM7	or whatever your program is named
M	displays menu
CAL	then telephone number
<CR> <CR>	2 carriage returns
CTL–E	exit Terminal Mode
T B:FILENAME.TYP	Terminal Mode & save session to disk
CTL–Y	start saving copy into buffer
J	exit to CP/M (in this example)
FILEFIND USQ?.*	locate a file on system
CTL–R	stop copy into buffer
XMODEM S USQ.OBJ	prepare remote system to send file
CTL–E	exit from Terminal Mode
WRT	write buffer contents to disk
R B:USQ.OBJ	receive file on your B drive
T	return to Terminal Mode
BYE	exit the remote system
CPM	leave MODEM7 and return to CP/M

HOW TO OBTAIN MODEM7

By far the best place to obtain a version of MODEM7 for your microcomputer, is from a local user's group. Earlier I mentioned that the program needs to be configured for your computer, and, as this is not an easy task, it is best if you obtain a copy that is ready-to-run. Check with local computer dealers for user groups in your area. Many of the magazines written for specific computers will have a section devoted to user groups, or will carry notices of meetings. *Computer Shopper*, a monthly publication found on many magazine stands, carries a regular free listing of users groups. If there are no groups conveniently located near you, you might look to regional, national or, what Alfred Glossbrenner calls "super groups," like the Boston Computer Society, which is an umbrella organization with numerous special interest groups. (See Glossbrenner, Chapter 3. Also, Chapter 5 lists machine-specific groups that can be contacted for newsletters and free software.) If your machine runs CP/M you will have an excellent chance of finding a version of MODEM7.

For the great number of IBM/PC users out there, using PC–DOS, there are at least two programs which support the XMODEM protocol. PC–TALK III, written by Andrew Fluegelman, is a "Freeware" program, with a $35 suggested contribution if you find the program useful. You can try to get it free from a user's group in order to try it, or send your order with the suggested donation to:

The Headlands Press, Inc.
P. O. Box 862
Tiburon, CA 94920

Another program, PC–DIAL written by Jim Button, author of the popular PC–FILE program, also supports the XMODEM protocol. The suggested contribution of $25 may be sent to:

Jim Button
P. O. Box 5786
Bellevue, WA 98006

Two other groups have put together collections of IBM/PC software, and their catalogs are worth sending for. "PC/BLUE" is a collection assembled by the New York Amateur Computer Club (NYACC). A catalog of the collection (vols. 1-110) is available for $5 from:

New York Amateur Computer Club
P. O. Box 106, Church Street Station
New York, NY 10008

Much more detail on disk contents can be found in the books published by the NYACC. Book 1, costing $10, covers the first 26 volumes. Other volumes are forthcoming. PC–TALK is on disks 31-32; PC–DIAL is on disk 53; MODEM7 for the IBM/PC is on disk 37. Disks may be ordered from NYACC for $6 per disk postpaid. Disks for the IBM/PC are distributed in double sided, double density, 320KB. I have also heard that there are excellent features found in a new program called QMODEM 2.87E on vol. 107.

The other group with a major collection of IBM/PC software is the PC Software Interest ►

Group (PC – SIG). A catalog of their collection is $5.95, including postage. (Directory of Public Domain (and User-Supported) Software for the IBM Personal Computer, ISBN 0-915835-01-0, found at some bookstores for $4.95.) Disks may be ordered for $6 each plus $4 per order for shipping and handling. PC – DIAL is on disk #129; MODEM7 is on disk #4. The address is:

PC Software Interest Group (PC – SIG)
1556 Halford Ave., Suite #130
Santa Clara, CA 95051

There are also quite a number of commercial programs available which support the XMODEM protocol. (Some of these are listed in Glossbrenner, Appendix A, or check with your local dealer.) A commercial program may offer additional desirable features, and may have better documentation. In my case however, the MODEM7 documentation was much more understandable than what came with my commercial program. For those of you wondering about using MODEM7 or a similar program for online searching of DIALOG, BRS or others, it works just fine, and in fact, I found it easier to log the session using MODEM7 than with my other communications program.

For those of you wondering about using MODEM7 or a similar program for online searching of DIALOG, BRS or others, it works just fine, and in fact, I found it easier to log the session using MODEM7 than with my other communications program.

Some of you may already have a communications program and may wonder whether you can download a version of MODEM7. Yes, this is possible if your program can transfer binary files, but remember to look for a version preconfigured for your machine. Also, keep in mind that there are many files of support programs and program overlays that are part of a MODEM7 package, and they are usually found on a remote system as a "library file," that is, a group of programs listed as one file with the extension **.LBR**. The user must then separate these programs using another public domain program called "LU.COM," library utility. Another point to be made is that for LARGE programs like this, it is probably cheaper to buy a whole disk of programs for $6 than to pay telephone charges for downloading, unless, of course, the system is near by.

WHERE TO CALL

After you have obtained a copy of some version of MODEM7, you will probably be eager to learn about bulletin boards or RCP/M systems that you can call. The following are suggestions for finding telephone numbers. Users groups with newsletters are a good source for numbers, and some groups even maintain their own systems for software distribution, such as the RCP/M's established by the First Osborne Group. Many microcomputer magazines have columns or listings of bulletin boards. The *Computer Shopper*, mentioned previously, carries a list of numbers in every issue, conveniently arranged by area code. I have seen several books lately in bookstores with listings of bulletin boards. Due to the nature of publishing and the fluctuating status of bulletin boards, a book can never be totally accurate; however, one book I have does offer an update service. Mike Cane, *THE COMPUTER PHONE BOOK*, New American Library, 1983; monthly subscription to *THE COMPUTER PHONE BOOK UPDATE*, for $20, sent to: Mike Cane, The Computer Phone Book, 175 Fifth Ave., Suite 3371, NY, NY 10010. Finally, I mentioned earlier that many bulletin boards will have a list of other systems' numbers, and sometimes this can be quite an extensive listing. So, to end, I will list just a couple of numbers for those of you that are totally stuck for that first call. Good luck! (I claim no responsibility for the accuracy of these numbers by the time you read this).

(201) 272-1874	RCP/M and BBS, Cranford, NJ (SIG/M, Amateur Computer Group of NJ)
(301) 949-8848	Capitol PC Users Group (password = IBMPC) MD
(213) 653-6398	RCP/M RBBS Hollywood, CA (worldwide RCP/M list; special interest, Kaypro)
(619) 561-7277	PMS Santee, CA (Apple II)
(718) 539-3338	RCP/M and BBS, Flushing, NY (NYACC; new PC – Blue and SIG/M)
(203) 744-4644	BULLET – 80, Danbury, CT (TRS – 80)

ACKNOWLEDGEMENTS

The author would like to thank Carl Hane Jr. for his valuable assistance, and Rich Cawley of Stage Door Video in Pleasantville, NY for permission to use his system for this example.

Communications to the author should be addressed to Paula Hane, Reference Librarian, SUNY College at Purchase Library, Purchase, NY 10577, telephone: (914) 253-5096.

SOURCE CODE

by Paul W. Kittle
Director of Medical Libraries
Adventist Health Systems
Loma Linda

SUBROUTINES FOR YOUR ILL PROGRAM

I hope that the last issue of *DATABASE* has captured your interest in an ILL program. This column will include two small subroutines that can be placed in your ILL.PRG program, which was published in the December issue of *DATABASE*. One of the routines allows the user to Mark or Look at a particular ILL request. The other will allow the user to actually exit dBASE II using assembly code. The second routine is a modified version of code that first appeared in the magazine *Databased Advisor*. It has been changed to work with your ILL.PRG program.

The retrieval routine allows for a variety of manipulations of the ILL database. You may wish to add other features beyond those presented here. In order to use this with the routine published last December, you will want to add the prompts in your "ILL.PRG" menu.

Working with your ILL data will often involve the tracking of those ILL's. The librarian will want to find which ones are still pending, and which ones may have been received. This data may in turn be used for statistical tracking.

The second routine allows the user to exit the dBASE II routine and perform DOS level commands or functions, perhaps a Lotus spreadsheet, or some other equally challenging option. As long as the pathing structure is spelled out, either prior to the loading of the dBASE program, or in the routine that is called, the exiting and re-entry should not pose too much of a problem. I would suggest it be tried prior to implementation, as this type of assembly call gets a bit involved.

Editor's note: We have occasionally broken program lines to fit column width. Any line that begins with --- is a continuation of the preceding line; when entering the code into your computer, continue to type the marked line (leaving out the ---) on the same line as the line above it. If a space is critical where the line breaks, the continuation begins ---(sp). Continue to type the marked line, leaving out the ---(sp), but insert the space.

Due to our column width it has been necessary in this program to insert a comment regarding the number of spaces that should be included in some program lines when typing the program, i.e. (26 spaces). Leave the recommended number of spaces in your program line when typing it, for the best format. These comments are in italics, to distinguish them from the program content.

Neither Online, Inc. nor the author are responsible for loss of data as a result of using any published program. It is the responsibility of the end-user to verify the appropriateness of this and other "freeware" programs. NG

The Look-up routine that can be added to December's Column:

```
* 09/30/86 ILLOOK.PRG
* COPYRIGHT ONLINE, INC. & P.W.KITTLE
DO BORDER5
STOR 'ILL Retrieval Menu' TO LP
@ 12,26 SAY CHR(17)+CHR(179)
@ 12,28 GET LP
@ 12,46 SAY CHR(179)+CHR(16)
RELE LP
STOR '      (55 spaces)                                    ' TO LP
STOR GD2 + ':ILL' TO LIDBF
STOR GD2 + ':ILLREQU' TO LINDX2
STOR GD2 + ':ILLTITL' TO LINDX1
CLEA GETS
DO BORDER3
@ 21,23 SAY G9 + ' NAME OF ILL OR REQUESTER? ' + G5
@ 22,10 GET LP
READ
STOR I(LP) TO LP
STOR TRIM(LP) TO LP
IF LP = ' '
RETU
ENDI
```

```
USE &LIDBF INDE &LINDX1
FIND &LP
STOR 'TITLE' TO LUPT
IF # = 0
USE &LIDBF INDE &LINDX2
FIND &LP
STOR 'LNAMERQ' TO LUPT
ENDI
DO WHIL &LUPT = LP .AND. .NOT. EOF
DO BORDER3
STOR 13 TO LN
DO WHIL LN < = 17 .AND. &LUPT = LP .AND. .NOT. EOF
@ LN,2 SAY 'Book Author / Journal Title: '
@ LN+1,8 GET TITLE
@ LN+2,2 SAY 'Book Title / Journal Article Author:'
@ LN+3,8 GET AUTH
@ LN+4,2 SAY 'Date Input: '
@ LN+4,15 GET DATES
@ LN+4,26 SAY 'Status/Date Recvd:'
@ LN+4,44 GET RECDATE
@ LN+5,2 SAY 'Name of Requester:'
@ LN+5,25 SAY LNAMERQ + ' ' + FNAMERQ
@ LN+6,2 SAY 'Library Ordered From:'
@ LN+6,27 GET LIBNM
STOR LN+7 TO LN
SKIP
ENDD
IF LN > 18
STOR ' Space or Return to Continue, Any other Key to Abort ' TO LZZ
@ 22,10 GET LZZ
SET CONS OFF
WAIT TO LQQ
SET CONS ON
IF LQQ # ' '
USE
RELE ALL LIKE L*
RETU
ELSE
ENDI
IF REC = 'N'
@ 22,3 SAY ' (21 spaces) Mark this ILL as received ? (18 spaces) '
SET CONS OFF
WAIT TO LRG
SET CONS ON
STOR !(LRG) TO LRG
IF LRG = 'Y'
REPL REC WITH LRG
REPL RECDATE WITH DATE ()
ENDI
ENDI
IF REC = 'Y'
@ 22,3 SAY ' (17 spaces) Delete this Record from ILL File ? (15 spaces)'
SET CONS OFF
WAIT TO LRG
SET CONS ON
STOR !(LRG) TO LRG
IF LRG = 'Y'
DELE
PACK
USE &LIDBF INDE & LINDX2,&LINDX1
REIN
ENDI
ENDI
STOR 13 TO LN
DO WHIL LN < = 19
@ LN,2 SAY ' (67 spaces)
@ LN+1,2 SAY ' (65 spaces)
@ LN+2,2 SAY ' (65 spaces)
@ LN+3,2 SAY ' (65 spaces)
@ LN+4,2 SAY ' (65 spaces)
@ LN+5,2 SAY ' (65 spaces)
@ LN+6,2 SAY ' (65 spaces)
STOR LN+7 TO LN
ENDD
ENDD
```


COMING IN MARCH *ONLINE* MAGAZINE. . .

THE INVISIBLE CRASH—An article discussing how you can prevent the passive destruction of data

DIALMAIL—Electronic mail for the online professional—An indepth review

ISDN and Project Victoria—Exploring new products and services that will affect the way we work

Le Pac—The University of Illinois' experience distributing an online catalog on CDROM

CORPTECH—What is it and how is it distributed?

Watch for our regular columns containing vital search tips and techniques, laserdisk product evaluation, document delivery advice, and good business searching strategies. In addition, Hardcopy provides honest, object reviews of important books in our industry. . .reviews written by discriminating professionals.

ONLINE reports current NEWS about the database industry, always watching the PEOPLE on the move. Also, count on a provocative editorial and letters from around the world. In short, March *ONLINE* is another important issue that can't be missed.

ONLINE '87

OCT. 20-22
DISNEYLAND HOTEL
ANAHEIM, CA

MARK YOUR CALENDAR
PUT IT IN YOUR BUDGET
PLAN AHEAD—DON'T FORGET

For further information, clip & mail

Please send an advance program when available in May, 1987.

Name _____
Company _____
Address _____
City/State/Zip _____
Country _____

Mail to: ONLINE '87, 11 Tannery Lane, Weston, CT 06883

DB2/87

```
USE
RETU
```

********** Second Program **********

This routine can be added to the ILL.PRG to actually send those ILL's generated in the December column's source code.

```
* 09/21/86 OUT.PRG a Modification of a routine originally
* published in DATABASED ADVISOR. Modified by P.W.KITTLE
* COPYRIGHT ONLINE, INC. & P.W.KITTLE
CLEAR GETS
SET TALK OFF
SET COLO OFF
STOR 60160 TO LHEX
POKE LHEX + 0, 235, 20, 0, 0, 128, 0, 0, 0, 92, 0
POKE LHEX + 10, 0, 0, 108, 0, 0, 0, 0, 0, 0, 0
POKE LHEX + 20, 0, 0, 232, 0, 0, 94, 131, 238, 23, 137
POKE LHEX + 30, 100, 18, 188, 0, 224, 83, 187, 0, 16, 180
POKE LHEX + 40, 74, 205, 33, 115, 6, 180, 1, 91, 233, 140
POKE LHEX + 50, 0, 91, 191, 44, 0, 139, 21, 137, 20, 140
POKE LHEX + 60, 218, 137, 84, 4, 137, 84, 6, 137, 84, 12
POKE LHEX + 70, 137, 100, 14, 86, 139, 243, 138, 15, 181, 0
POKE LHEX + 80, 70, 81, 138, 4, 60, 32, 116, 7, 60, 47
POKE LHEX + 90, 116, 3, 70, 226, 243, 89, 86, 43, 243, 78
POKE LHEX + 100, 43, 206, 191, 128, 0, 136, 13, 71, 94, 81
POKE LHEX + 110, 88, 252, 243, 164, 176, 13, 170, 94, 176, 0
POKE LHEX + 120, 136, 4, 191, 92, 0, 185, 36, 0, 243, 170
POKE LHEX + 130, 89, 227, 16, 190, 129, 0, 191, 92, 0, 184
POKE LHEX + 140, 1, 41, 205, 33, 191, 100, 0, 205, 33, 94
POKE LHEX + 150, 184, 0, 75, 139, 211, 66, 139, 222, 205, 33
POKE LHEX + 160, 115, 5, 180, 2, 235, 4, 144, 184, 0, 0
POKE LHEX + 170, 140, 203, 142, 219, 142, 195, 232, 0, 0, 94
POKE LHEX + 180, 129, 238, 177, 0, 250, 142, 211, 139, 100, 14
POKE LHEX + 190, 251, 137, 68, 16, 139, 100, 18, 195
STOR 'Y' TO CONT
DO WHIL CONT = 'Y'
STOR '      (57 spaces)                                    ' TO PROG
DO BORDER8
DO BORDER3
@ 13,8 SAY 'This routine exits your ILL program & goes to the SYSTEM'
@ 14,5 SAY 'The Telecommunication program and COMMAND.COM
---(sp)must be in '
@ 15,5 SAY 'the same root directory as this routine in order to work or'
@ 16,5 SAY 'you are likely to get a "file not found" error. You must '
@ 17,5 SAY 'proceed your program name with: "command.com/c" +
---(sp)file '
@18,5 SAY '  for example: "COMMAND.COM/C QMODEM" to load
---(sp)QMODEM. . . (8 spaces)'
@ 21, 9 SAY '  Please input above information plus your Telecomm
---(sp)program: '
@ 22,10 GET PROG
READ
ERAS
STOR I (PROG) TO PROG
STOR TRIM(PROG) + CHR(13) TO PROG
IF PROG = '  '
RETU
ENDI
SET CALL TO LHEX
CALL PROG
STOR PEEK(LHEX+19) TO LERROR
IF LERROR=1
? 'Unable to release the memory needed above your Program.'
ENDI
IF LERROR=2
? 'Sorry, but I cannot comply with your request. . .'
? 'The ERROR I get is: (SEE PAGE D-14 DOS MANUAL) :',PEEK
---(LHEX+18)
* please note that this reference is to the DOS Manual that is
* sold to the Repair people. It is NOT the one that comes
* normally with the purchase of DOS.
ENDI
SET DEFA TO &GD1
? 'CONTINUE? (Y/N)'
SET CONS OFF
WAIT TO CONT
SET CONS ON
STOR I(CONT) TO CONT
ENDD
SET DEFA TO &GD1
RETU
```

********** End of Program **********

Please note that these last two columns have been coded in dBASE II. There are significant changes in dBASE II and dBASE III+, so be certain that the logical flow of the program is understood before using the dBASE III+ utility "DCONVERT." DCONVERT will generally convert most of any particular program; however, it will not convert the logic in most cases. dBASEII allows for different clustering of DO WHILE statements, which are handled quite differently by dBASE III+, which was written using the "C" language. One of the most noticeable differences lies in the treatment of a multiple statement line like: DO WHILE A = N .AND. B = F .OR. A = F .AND. B = N .AND. .NOT. EOF() dBASE III+ will tend to look at the first portion of the line, and if that satisfies what it is needing, it will tend to ignore the rest of the line. dBASE II did not do this, and looked at the entire statement prior to continuing on.

Mention of Qmodem has been made several times by this author. I would like to point out that several "Freeware" programs exist, along with the various proprietary programs. At the time of the writing of this column, Qmodem was the only routine of several that would actually upload without problem to CLASS/ONTYME. As specified in previous articles, this is the system I currently use for ILLs. Comments with regards to DOCLINE will, no doubt, appear in future articles.

A final comment in ending this month's column. ASHTON-TATE has shown an excellent decision, in this author's opinion, by removing the copy-protection from its products. In addition, ASHTON-TATE has offered to upgrade all versions of dBASE to the new uncopy protected version of dBASE III+ at a very reasonable fee. Given this new opportunity, very few of the future columns will be written in dBASE II, unless some of you request it.

So much for this month's column. I hope these additional routines have given you, the reader, some more ideas for an ILL program to help you in your work. In future columns I will be discussing using dBASE III+ in a network setting. Until then, Happy programming!

Communications to the author should be addressed to Paul W. Kittle, Director of Medical Libraries, Adventist Health Systems Loma Linda, P.O. Box 2000, Loma Linda, CA 92354.

SOURCE CODE

by Paul W. Kittle
Director of Medical Libraries
Adventist Health Systems
Loma Linda

CODE TRANSLATIONS: dBASE II, R:BASE 5000, dBASE III PLUS

This issue's column will be a slight break from the previous issues; it will not contain any "source code" *per se*. It also marks the last column for a couple of issues. This column will deal with some translations of code syntax between dBASE II, R:BASE 5000, and dBASE III. This may be of assistance to individuals who are upgrading or switching from one language to another.

First of all, I would like you to have a few terms translated from dBASE II to R:BASE or visa versa. Please see them in the table following the column. This short list of translations will help the person wishing to cross over between the languages.

Next, I would like to touch on some of the differences between dBASE II and dBASE III PLUS. As I have mentioned in previous columns, dBASE II and dBASE III PLUS were written in different languages themselves. The most important item to be aware of is that dBASE III PLUS was written in the C language. This gives dBASE III PLUS its great speed and flexibility, but trades off in one or two areas that were more flexible in dBASE II, in particular, the use of what are called imbedded MACROS. These MACROS could be used to decrease the amount of code necessary to write certain routines.

For instance, in a library program, TITLE and ABBREVIATION could both be stored to the same memory variable. A memory variable can be thought of as a bucket that is used only temporarily during the operation of a particular program. We can place anything we want into this "bucket:" a number, a character, a "string." "TITLE" would be a character string. It is not a number, and it is longer than one character, ergo, it is a "character" "string." So if we place TITLE in this bucket, and we cannot locate the title, we can write the program to let us then place "ABBREVIATION", or some other item we want to find. By using the following code, we can look for the title, and failing that, look for the abbreviation.

```
DO WHILE &LLOOK=&ITEM .AND. .NOT. EOF
```

In this case, `&LLOOK` would be the MACRO that we want to find, for instance "DATABASE MAGAZINE." `&ITEM` would be, in the first instance, TITLE. What the computer sees is:

```
DO WHILE DATABASE MAGAZINE = TITLE .AND. .NOT. EOF
```

As long as DATABASE is in our database, the program would stop here. However, if we input instead "DB MAG," and had used this as our abbreviation for DATABASE MAGAZINE, we could input "DB MAG" into our memory variable, or "bucket." Our line would then look like so to the computer:

```
DO WHILE DB MAG = TITLE .AND. .NOT. EOF
```

Since the title is not "DB MAG," dBASE II would normally return a `NO FIND` code. However, if the code had been written to then look further, i.e.:

```
IF #=0
STOR 'ABBREVIATION' TO &ITEM
DO WHILE &LLOOK = &ITEM .AND. .NOT. EOF
```

The computer then sees:

TABLE 1

dBASE II to RBASE 5000 TRANSLATIONS

dBASE II	R:BASE 5000
Store	Change
=	EQ
Use	Open
Append	Load
List (Disp)	Select <All from (filename)>
Erase	Newpage
Wait (Accept) to	Fillin
Store <variable>	Show <variable>
&<variable>	.<variable>
Find	<Field> contains <String>
Insert Line/Delete Line	F1/F2 (Function Keys)
Do/Enddo	While/Endwhile
File	Table (Relation)
Field	Column
Record	Row
Display Structure	List table all
Go Bottom/display	Edit all from <table> where count = last

```
DO WHILE DB MAG = ABBREVIATION .AND. .NOT. EOF
```

It now looks for "DB MAG" as an abbreviation, and will now locate it, providing it has been input into the database. dBASE III PLUS can also find material by looking beyond a **NO FIND** result. *But*, and this is important, if we add a further **DO WHILE** command to limit the amount of material displayed to a screen size, we will go into an endless loop in dBASE III PLUS. For example, if we store 0 to the memory variable named "LINE" (which will represent how many lines we want to display on the screen at any one time, we would say something like:

```
DO WHILE &LLOOK = &ITEM .AND. LINE< 20 .AND. .NOT. EOF
```

and then add **STOR LINE + 1 TO LINE** somewhere in our **DO WHILE** loop. This will work in dBASE II, but if we add it to our other line of code:

```
DO WHILE &LLOOK = &ITEM .AND. .NOT. EOF
DO WHILE &LLOOK = &ITEM .AND. LINE < 20 .AND. .NOT. EOF
```

dBASE III PLUS cannot handle it because the C language cannot handle it. Therefore the code has to be rewritten to say:

```
DO WHILE TITLE = &ITEM .AND. .NOT. EOF
DO WHILE TITLE = &ITEM .AND. LINE < 20 .AND. .NOT. EOF
```

This will have to be written for each data field we wish to look for, and this means more code for dBASE III PLUS applications. This is only one of the many differences between dBASE II and dBASE III PLUS.

Another difference, and this one actually SAVES code, is the ability to draw boxes with a single line of code. If you will remember back to a previous column where I explained about writing code for appearance, you will remember about storing extended ASCII characters to memory variables, then building boxes with those variables. In dBASE III PLUS, the code to draw a similar box can be written like so:

```
@ 1,0 TO 12,76 DOUBLE
```

This will draw a box exactly like the one called BORDERT.PRG in that previous article, and it certainly helps to make up for some of the extra code. It is an entire program written in one line! Remember some of these differences when writing code in dBASE III PLUS. It might be useful to pick up a book on the C language that explains the peculiarities of C.

Another item of note is the differences in speed between dBASE II and dBASE III PLUS. For example, a file in dBASE II with 3400 records and four index files can take up to 4 hours to sort on a floppy-based system, 1½ hours on an XT system, and 40 minutes on an AT-based system. In dBASE III PLUS, this same database file and set of four index files takes approximately 14 minutes to sort on an XT-based system. This is the speed that is available in dBASE III PLUS. It is well worth the time and energy to convert older dBASE II programs to dBASE III PLUS.

Until next time: Happy programming!

Communications to the author should be addressed to Paul Kittle, Director of Medical Libraries, Adventist Health Systems Loma Linda, P.O. Box 2000, Loma Linda, CA 92354.

"MAKEDB"

A Low Cost Alternative To Sci-Mate, Pro-Cite, et al. . . .Usable With Free "Generic" Retrieval Systems

by Clyde W. Grotophorst
Systems Librarian
George Mason University

Editor's Note: Just prior to press time, the author advised me that it is also possible to revise this program to allow the inclusion of abstracts in a converted file, and to read the results into Nutshell, another database management program (reviewed in ONLINE, March 1986). He also stated that the program could be easily revised to convert Dialog files if they were downloaded in Format 4, Dialog's tagged format. NG

The demands placed upon a library's online search service have become more complex. Where five years ago a cryptic printout on thermal paper was prized, today's end-user as often as not wants the search results downloaded to a diskette for subsequent manipulation. Recognizing this, several companies market programs that handle the entire process—from conducting the search to reformatting the results for use with a proprietary database management system (e.g. Sci-Mate or Pro-Cite). These products are impressive but their cost is relatively high and their utility does not extend very far beyond this particular application. This article describes an alternative means of approaching similar results, but by using software available in many libraries (BASIC and dBASE III).

WHY DBASE III?

If one judges by the number of articles appearing in the library automation press, dBASE III has pretty much established itself as the microcomputer DBMS package of choice. It is certainly a powerful package capable of performing many of the tasks one traditionally associates with libraries—the orderly filing and systematic retrieval of information—but it leaves something to be desired when it comes to bibliographic work. The fixed-length field structure translates into a significant waste of disk space while the rigidity that governs importing data from other sources can frustrate even experienced programmers. Nevertheless, there are compelling reasons for its use including: many libraries and end-users already have a copy of the program that they use for other purposes; it is capable of handling large databases (practically speaking limited only by available disk space); and perhaps more important, if libraries have access to one of the commercial

compilers available (e.g. CLIPPER), generic retrieval systems can be developed, compiled, and freely distributed to users along with the data. These compiled systems, while written initially in dBASE III (or a program editor) do not require that the user own a copy of dBASE III to use them. No matter how impressive products like Pro-Cite or Sci-Mate are, it is the unusual library that can afford to distribute a copy to every client.

At George Mason University, we have begun to notice an increasing number of faculty requests for a means of transforming downloaded search results to a database management system.

At George Mason University, we have begun to notice an increasing number of faculty requests for a means of transforming downloaded search results to a database management system. The library certainly contributed to this demand when some months ago we developed and distributed a menu-driven reprint tracking system (SmallCat) to members of the university community. Compiled via CLIPPER, that program served to whet the faculty appetite for small, personal database management systems, but it also created an interest in systems that did not require data entry from the keyboard.

CONVERSION FROM BRS TO DBASE III

The decision to use BRS files for this application was easy to make since the computers at BRS are kind enough to label the fields they send out. This greatly simplifies the task of instructing a computer to parse them apart again. The BASIC program that accompanies this article accomplishes the conversion task without operator intervention, creating a file that can be read into dBASE III using the Standard Data Format (SDF) option. As presented, the program will take author, title, and source lines from a downloaded BRS file (the 'bibl' format) and convert them to a dBASE structure. The option of including a field that contains up to 77 characters from the descriptor field is also provided. The program contains a number of comments, but some general remarks on the process should help those interested in modifying the program for their own purposes.

There are two problems that complicate this conversion process. They are the fixed-length field structure of dBASE III, and the development of an algorithm for determining in which field a particular string of output from BRS belongs. It is worth examining each in some detail, beginning with the file structure.

As is true of most micro-based DBMS packages, dBASE III requires that fields have an unchanging length. As a result, when a data file is read into a dBASE structure, the relative position of the information in the file becomes critical. If told that the author field will be 120 characters, then as the 121st character is read (assuming it is not a carriage return) dBASE assumes it belongs in the next field. No factor beyond the data's position in the file is considered. As BRS citations contain fields of varying length, some sort of compromise must be reached.

The easiest solution is to project the length of the longest data string and structure the database accordingly. Since the first three characters of each BRS line are not converted (they contain either spaces or field labels), the maximum length per line is 77 characters. It follows that if the title information could consist of as many as three lines of BRS output, you need to reserve 221 characters for the title field in your database. If the information requires fewer than 221 characters, the data string will have to be 'padded' with spaces on the end (221 minus the number of characters in the original data string). Depending on the online database used, you may find that you can 'cheat' these requirements a bit. Typically field lengths of 100, 200, and 90 characters will suffice for the Author, Title, and Source information.

The second problem involves assigning the incoming BRS data to the proper dBASE field. The LINE INPUT statement in BASIC brings data from the search results file into the program one line at a time, making context-based decisions more difficult.

FIGURE 1. A TYPICAL CITATION AS DOWNLOADED FROM BRS (LINE NUMBERS ON THE LEFT MARGIN ADDED).

```
[1]          21
[2] AN  86-10393. 8604.
[3] AU  Pfeffer-Jeffrey. Davis-Blake-Alison.
[4] TI  Administrative Succession and Organizational Performance: How
[5]     Administrator Experience Mediates the Succession Effect.
[6] SO  Academy of Mgmt Jrnl. VOL: v29n1. PAG: 72-83, 12 pages. Mar
[7]     1986.
```

Consider line four in the sample above. It is not particularly difficult to develop logic that ►

can look at that line and correctly assign it to the first line of the TITLE field. The 'TI' tag in the first three characters of the line fairly shouts an appropriate attribution. A line like number seven is a bit more difficult.

Testing the first three characters of line seven will return only three spaces. Based only on that information, and viewed in isolation, it could be either a second author line, a second or third title line, a second source line, a line from the abstract, descriptor, or any other field that covers at least two lines. The key to establishing a context for the information lies in building a citation in memory as the incoming lines are analyzed. The logic of the algorithm is as follows: a line is read into the program from the BRS file and first passed through a section that eliminates from further consideration lines like the space between citations, BRS messages, and the like. The line is then passed to a subroutine that examines the initial three characters of the string. It first checks to see if it contains a field label, in which case it is assigned to either the first author, title, or source memory variable (A1$, T1$, or S1$ respectively). If the first three characters are spaces, the program next tests the length of all the strings in memory to see which have already been filled. To illustrate the process, the analysis of line five from figure 1 is charted below:

step 1) "Administrator Experience Mediates the Succession Effect." Is read from BRS file.

step 2) Test on first three characters shows 3 spaces, so this can't be Author 1, Title 1 or Source 1

step 3) Length of Author line 2 in memory is checked. It is empty. This might be the 2nd Author line.

step 4) Length of Title 1 line in memory is checked. It exists so this can't be author 2. Check Title 2. It doesn't exist. This might be Title 2.

step 5) Check length of Source 1 in memory. It doesn't exist. This has to be title line 2. Store this in memory as T2$.

step 6) Return to get another line from the BRS file

When the program reads in a line that is less than ten characters long and begins with six spaces (which means it must be the number between citations), it assumes we have received all the data we need for the previous record. The various memory strings for author, title, source are concatenated, padded out with required spaces, then written to the disk.

One additional point about the descriptor tag. The program allows the user to decide whether or not to include it in the converted database, but it creates a field of no more than 77 characters from that information. This was done both to keep the analysis logic as simple as possible and to preserve disk space. It could be argued that since users will gather citations from a number of databases, the indexing provided by descriptors will not be uniform and thus is less valuable than terms the user assigns manually. In fact, we recommend that descriptors not be included unless the data comes from a single file. Figure 2 shows how fields other than those imported from the BRS text file may be incorporated into the resulting dBASE file.

The only remaining challenge is reading this newly created file into dBASE III. Since the converted text file is in the Standard Data Format (which means simply that records are separated by a carriage return/line feed sequence and that the field lengths are consistent for each entry), we can use the dBASE command APPEND to accomplish the task. The first step is creating a dBASE database structure to fill with our converted data. As Figure 2 shows, it is imperative that the field width match the numbers given MAKEDB exactly, and that the database structure list the fields in the same order they appear in the converted BRS text file (Author, Title, then Source).

FIGURE 2

Sample screen showing creation of target file (BRSTXT.DBF) structure via dBASE III. Notice that this database contains two additional fields (NOTE and KEYWORD). This was done so the user could add data to each record if needed. The note field might contain reprint information or something about the work while the keyword field can be indexed via dBASE for fast retrieval. Fortunately, the SDF format instructs dBASE to move to the next record when the CR/LF sequence is found in our converted file, preserving these two fields as blanks in each record of our new database.

```
C:BRSTXT.DBF
                                        Bytes remaining: 3560
                                        Fields defined    5
     field name      type          width          dec
1    AUTHOR          Char/Text      95
2    TITLE           Char/Text     190
3    SOURCE          Char/Text      90
4    NOTE            Char/Text      50
5    KEYWORD         Char/Text      15
Hit RETURN to confirm - any other key to resume
```

Assuming that the converted file is called

BRS.TXT, at the dBASE III '.' prompt, the user enters **APPEND FROM BRS.TXT SDF** <cr>. dBASE will return a message telling the user how many records were added. From there one could either query the database from the dot command level or design a set of programs that created a menu-driven bibliographic system.

The program MAKEDB offers several other useful features. Recognizing that users typically gather citations from a number of databases, the program provides for output to go either to a newly created file or it will append it to a file that has already been converted.

The program MAKEDB offers several other useful features. Recognizing that users typically gather citations from a number of databases, the program provides for output to go either to a newly created file or it will append it to a file that has already been converted. The user is also given the option of running the program with or without displaying the incoming data and reformatted results as it is processing. With display mode activated, the program processes 20 records per minute. If display is turned off, it will process 40+ records in the same period. Finally, to increase the program's utility for users of database software other than dBASE III, the program accepts keyboard input of the character needed as a delimiter between individual fields and records. Making minor modifications to the program can also adapt it for use with other software packages, inserting the necessary formatting instructions in the lines where the program prints data to the converted file (e.g. PRINT #2,. . .).

CONCLUSION

While using dBASE is no match for the features found in commercial products, it is extremely flexible. Beyond developing bibliographic systems, we have used the MAKEDB program in the production of a KWIC index to a particular journal, after downloading the citations from BRS. In applications where the user is working with one or two databases exclusively, MAKEDB could be modified to do additional reformatting as it creates the database text file (perhaps changing the VOL and PAG text in the output or breaking the source line into multiple fields so that date, page number, and source publication could store as separate fields). The utility of this tool is limited only by the ability and imagination of the user.

FIGURE 3

EXCERPT OF DOWNLOADED FILE (ABI/INFORM)

```
      39
AN  86-01702. 8601.
AU  Dalton-Dan-R.  Kesner-Idalene-F.
TI  Organizational Performance as an Antecedent of Inside/Outside
    Chief Executive Succession: An Empirical Assessment.
SO  Academy of Mgmt Jrnl. VOL: v28n4. PAG: 749-762, 14 pages. Dec
    1985.

      40
AN  85-32496. 8510.
AU  White-Michael-C.  Crino-Michael-D.  Hatfield-John-D.
TI  An Empirical Examination of the Parsimony of Perceptual Con-
    gruence Scores.
SO  Academy of Mgmt Jrnl. VOL: v28n3. PAG: 732-737, 6 pages. Sep
    1985.

END OF REQUEST

ENTER DOCUMENT SELECTION. __ :
```

FIGURE 4

FILE AFTER CONVERSION VIA MAKEDB

The lines have been artificially wrapped for this illustration. In actual practice, at least when converting for dBASE III, each record occupies one line, although that line may be hundreds of characters in length.

```
Dalton-Dan-R.  Kesner-Idalene-F.
      Organizational Performance as an Antecedent of Inside/
Outside Chief Executive Succession: An Empirical Assessment.
    Academy of Mgmt Jrnl. VOL: v28n4. PAG: 749-762, 14 pages. Dec
1985.
White-Michael-C.  Crino-Michael-D.  Hatfield-John-D.
      An Empirical Examination of the Parsimony of Perceptual
Congruence Scores
    Academy of Mgmt Jrnl. VOL: v28n3. PAG: 732-737, 6 pages. Sep
1985.
```

FIGURE 5

MAKEDB.BAS SCREEN FOR ESTABLISHING PROCESSING PARAMETERS

```
MakeDB – Convert BRS file to dBASE III  © 1986, GMUtant Software

Answer the field questions below with the length of your dBASE fields.
If you press RETURN the default(s) will apply. The DE field is optional,
but you can include no more than 77 characters from the DE text in your
dBASE file. Due to their length, abstract fields are not converted.

          Author field (120 default, 250 max): 100

          Title field (200 default, 250 max): 200

          Source field (90 default, 250 max): 90
```

►

31

FIGURE 5 (continued)

```
Do you want to include the Descriptor tags: N

Field Separator (T)ab, (Q)uotes, or (N)one: N
Enter BRS file to convert to dBASE format: BRSTXT.FIL

    Enter file name for converted file: BRS.TXT

        (C)reate a new file or (A)ppend: C

        Display while processing (Y/N): Y
```

FIGURE 6
SOURCE CODE FOR MAKEDB.BAS

(Note: Readers with an aversion to entering program listings can obtain a copy of MAKEDB.BAS as well as a compiled version of the program by sending a blank, formatted diskette to the author. Please include return postage.)

```
10      'MAKEDB.BAS
20      'Programmer:   Grotophorst 9/86 (c) GMUtant Software
30      'Users may copy, modify, and distribute the program freely.
40      '
50      CLEAR
60      CLOSE : COLOR 15,0 : KEY OFF : CLS
70      ON ERROR GOTO 1470
80       PRINT "MAKEdB — Convert BRS file to dBASE III database (c) 1986, GMUtant Software"
90      LIN$ = STRING$(79,CHR$(196))
100     PRINT LIN$
110     LOCATE 3,1 : PRINT "Answer the field questions below with the length of your database field.
        —(sp)If you"
120     LOCATE 4,1 : PRINT "press RETURN the default value(s) will apply. The DE field is optional,
        —(sp)but you"
130     LOCATE 5,1 : PRINT "can include no more than 77 characters from that text in your BRS file.
        —(sp)Due to"
140     LOCATE 6,1 : PRINT "their length, this program will ignore abstracts when converting data
        —(sp)from BRS."
150     PRINT : LINE INPUT " Author field (120 default, 250 max) : ";AA$
160     PRINT : LINE INPUT " Title field (200 default, 250 max) : ";TT$
170     PRINT : LINE INPUT " Source field (90 default, 250 max) : ";SS$
180     LOCATE 14,1 : LINE INPUT "Do you want to include the Descriptor tag in your file (Y/N)?
        —(sp)";DESC$
190     IF DESC$ = "Y" OR DESC$ = "y" THEN DESC = 1
200     IF DESC$ < > "Y" AND DESC$ < > "y" THEN DESC = 0
210     IF DESC = 0 THEN LOCATE 14,1 : PRINT STRING$(79, " ") : GOTO 270
220     IF DESC = 1 THEN LOCATE 14,1 : PRINT STRING$(79, " ") : LOCATE 14,1 : LINE INPUT
        —(sp)"Number of characters for DE field (77 max): ";DD$
230     IF VAL(DD$) < 6 THEN BEEP : LOCATE 14,50 : PRINT "Must be at least 6" : FOR DELAY = 1
        —(sp)TO 1000 : NEXT DELAY : GOTO 220
240     LOCATE 14,1 :PRINT STRING$(79, " ")
250     DD = VAL(DD$) : IF LEN(DD$) < 1 THEN DD = 77
260     IF DD > 77 THEN BEEP : LOCATE 14,35 : PRINT "TOO MANY!" : FOR DELAY = 1 TO 8 00 :
        —(sp)NEXT DELAY : GOTO 220
270     AA = VAL(AA$) : IF LEN(AA$) < 1 THEN AA = 120 'change 120 to set new default
280     TT = VAL(TT$) : IF LEN(TT$) < 1 THEN TT = 200 'change 200 to set new default
290     SS = VAL(SS$) : IF LEN(SS$) < 1 THEN SS = 90 'change 90 to set new default
300     IF AA > 250 OR TT > 250 OR SS > 250 THEN BEEP : LOCATE 24,1 : COLOR 8,15 : PRINT
        —(sp)"ERROR — field can not be over 250 characters! ";: COLOR 15,0 : FOR DELAY = 1 TO
        —(sp)1000 : NEXT DELAY : CLS : GOTO 60
310     LOCATE 14,11 : LINE INPUT "Record Delimiter (space default): ";DELIM$
320     IF LEN(DELIM$) < 1 THEN DELIM$ = " "
330     LOCATE 14,1 : PRINT STRING$(79," ")
340     LOCATE 14,4 : LINE INPUT "Field separator (T)ab, (Q)uotes, (N)one: ";SEP$
350     IF LEN(SEP$) < 1 THEN SEP$ = "N"
360     IF SEP$ = "N" THEN DE2$ = "TAB / ASCII 9"
370     IF SEP$ = "Q" OR SEP$ = "q" THEN DE2$ = "QUOTES and COMMAS"
380     IF SEP$ = "N" OR SEP$ = "n" THEN DE2$ = "None"
390     PRINT :PRINT"         Enter file to convert to dBASE format: ";
400     LINE INPUT F1$
410     PRINT :PRINT "          Enter filename for converted file: ";
420     LINE INPUT F2$
430     OPEN F1$ FOR INPUT AS #1
440     LOCATE 20,12 : LINE INPUT "(C)reate a new file or (A)ppend: ";METHOD$
450     IF METHOD$ = "C" OR METHOD$ = "c" THEN OPEN F2$ FOR OUTPUT AS #2
460     IF METHOD$ = "A" OR METHOD$ = "a" THEN OPEN F2$ FOR APPEND AS #2
```

FIGURE 6 (continued)

```
470   LOCATE 22,13 : LINE INPUT "Display while processing (Y/N): ";DISP$
480   IF LEN(DISP$) < 1 THEN DISP$ = "Y"
490   CLS
500   IF DISP$ = "N" OR DISP$ = "n" THEN 550 'skip next few lines if no display
510   LOCATE 2,1 : PRINT "inside the bar, file ";F1$;" may be viewed as read in."
520   COLOR 15,0 : LOCATE 22,15: PRINT "[converted fields display in reverse video]" : COLOR 7,0
530   LOCATE 4,1 : PRINT LIN$
540   LOCATE 6,1 : PRINT LIN$
550   WHILE NOT EOF(1)
560   IF NOT EOF(1) THEN LINE INPUT #1,A$ ELSE CLOSE : CLS : GOTO 1260
570   Z=LEN(A$)
580   IF DISP$ = "Y" OR DISP$ = "y" THEN LOCATE 5,1 : PRINT STRING$(79," "): COLOR 7,0
      --(sp)LOCATE 5,1 :PRINT A$ : COLOR 15,0
590   IF Z = 0 THEN 560
600   '
610   'Check for garbage before sending to analysis subroutine. Add additional
620   'statements here if desired for other tests.
630   '
640   IF INSTR(A$,"END OF REQUES") THEN 560
650   IF INSTR(A$,"ENTER DOCUMENT") THEN 560
660   IF INSTR(A$,"SEARCH STATEMENT") THEN 560
670   IF INSTR(A$,"USING SEARC") THEN 560
680   IF INSTR(A$,"bibl") THEN 560
690   IF INSTR(A$,"END OF DOCUME") THEN 560
700   IF INSTR(A$,"CONNECT TIME") THEN 560
710   ' example to trap issue field from ERIC -- if Mid$(a$,1,2) = "IS" then 560
720   '
730   '
740   ' If it made it through these then send to analysis subroutine
750   '
760   GOSUB 810
770   WEND
780   CLOSE
790   END 'should never get here!
800   '
810   'analysis subroutine to assign input string to proper memory variable
820   '
830   TST = 0 :TEST$ = MID$(A$,1,3) : Z = LEN(A$)
840   IF FULL = 1 AND MID$(A$1,4) <> "   " THEN RETURN 'we've seen AB tag so skip rest of
      --(sp)incoming record
850   IF INSTR(TEST$,"AU ") THEN A1$ = MID$(A$,4,Z) : RETURN
860   IF INSTR(TEST$,"TI ") THEN T1$ = MID$(A$,4,Z) :RETURN
870   IF INSTR(TEST$,"SO ") THEN S1$ = MID$(A$,4,Z) :RETURN
880   IF INSTR(TEST$,"AN ") THEN RETURN 'reject accession #
890   IF INSTR(TEST$,"AB ") THEN FULL = 1 : RETURN 'reject abstract & quit checking
900   IF DESC=1 AND (LEN(D1$) > 5 THEN FULL = 1 : RETURN 'reject from here on
910   If DESC = 1 AND INSTR(TEST$,"DE") THEN D1$ = MID$(A$,4,Z) : FULL = 1:RETURN
920   IF INSTR(TEST$," ") THEN TST = 1
930   IF TST = 1 AND LEN(A1$) > 5 AND LEN(T1$) < 5 THEN A2$ = MID$(A$3,Z):RETURN
940   IF TST = 1 AND LEN(A1$) > 5 AND LEN(T1$) > 5 AND LEN(T2$) < 5 AND LEN(S1$) < 5
      --(sp)THEN T2$ = MID$(A$,3,Z) : RETURN
950   IF TST = 1 AND LEN(A1$) > 5 LEN(T1$) > 5 AND LEN(T2$) > 5 AND LEN(S1$) < 5 THEN
      --(sp)T3$ = MID$(A$,3,Z) : RETURN
960   IF TST = 1 AND LEN(S1$) > 5 AND MID$(A$,1,4) <> "   " AND LEN(S2$) < 5 THEN S2$
      --(sp)= MID$(A$3,Z) : RETURN
970   IF TST <> 1 AND LEN(S1$) > 5 AND DESC = 0 THEN FULL = 1 : RETURN
980   IF Z < 10 AND MID$(A$1,4) = "   " THEN GOSUB 1010 'write to disk
990   RETURN
1000  '
1010  ' this subroutine writes all memory string values to disk. It measures
1020  ' the length of each and subtracts that from the value you gave the
1030  ' dBASE field lengths to pad out the various strings with spaces. After
1040  ' writing to disk, all memory string values are voided out, so the next
1050  ' series of tests in the analysis subroutine will be accurate.
1060  '
1070  IF LEN(A1$) < 5 AND LEN(T1$) < 5 THEN RETURN 'this catches first write off citation #
1080  FULL = 0
1090  LOCATE 24,70 : PRINT "[WRITING]";
1100  AU$ = A1$+A2$+STRING$(AA-LEN(A1$+A2$)),"  ")
1110  TI$ = T1$+T2$+T3$+STRING$(TT-(LEN(T1$+T2$+T3$)),"  ")
1120  SO$ = S1$+S2$+STRING$(SS-(LEN(S1$+S2$)),"  ")
1130  IF DESC = 1 AND LEN(D1$) < DD THEN DE$ = D1$+STRING$(DD-(LEN(D1$)), "  ")
1140  IF DESC = 1 AND LEN(D1$) > DD THEN DE$ = MID$(D1$,1,DD)
1150  IF DESC = 1 THEN 1300 'write to disk adding in DE$
```

►

FIGURE 6 (continued)

```
1160  IF SEP$ = "N" OR SEP$ = "n" THEN PRINT #2,AU$;TI$;SO$+DELIM$ : GOTO 1190
1170  IF SEP$ = "Q" OR SEP$ = "q" THEN PRINT #2, CHR$(34)+AU$+CHR$(34)+",";CHR$(34)+
      ---TI$+CHR$(34)+",";CHR$(34)+SO$+CHR$(34)+DELIM$ : GOTO 1190 'quotes and commas
1180  IF SEP$ = "T" OR SEP$ = "t" THEN PRINT #2,AU$+CHR$(9); TI$+CHR$(9);SO$+DELIM $
      ---(sp)'tabs between fields
1190  COLOR 7,0
1200  IF DISP$ = "Y" OR DISP$ = "y" THEN COLOR 8,15 :LOCATE 9,1 : PRINT AU$ : LOCATE 12,1 :
      ---(sp)PRINT TI$ : LOCATE 16,1 : PRINT SO$ : COLOR 15,0
1210  A1$ = " ": A2$ = " ": T1$ = " ": T2$=" ": T3$ = " ": S1$ = " ": S2$ = " ": AU$ =
      ---(sp)" ": TI$ = " ": SO$ = " ": D1$ = " ": DE$ = " "
1220  LOCATE 24,70 : PRINT "                ";: RETURN
1230  '
1240  'Ending Display
1250  '
1260  PRINT "DONE.      ";F1$ "has been converted. Use ";F2$;" with DBMS package."
1270  PRINT
1280  PRINT "Field lengths for ";F2$;" are: "
1290  PRINT
1300  PRINT "Author: ";AA;" characters"
1310  PRINT " Title: ";TT;" characters"
1320  PRINT "Source: ";SS;" characters"
1330  IF DESC = 1 THEN PRINT "Desc : ";DD;" characters"
1340  PRINT : PRINT "Field delimiter: ";DE2$
1350  PRINT : PRINT "Record Delimiter: ASCII ";ASC(DELIM$)
1360  IF DELIM$ = " " THEN PRINT : PRINT "Create a dBASE database using the field length
      ---(sp)values above. Then issue the       command: APPEND FROM ";F2$;" SDF." : IF INSTR
      ---(F2$,".TXT") = 0 THEN PRINT "Be sure to use the 'TXT' extension for ";F2$
1370  END
1380  'routine to print if descriptor field is included.
1390  FULL = 0
1400  IF SEP$ = "N" OR SEP$ = "n" THEN PRINT #2,AU$;TI$;SO$;DE$+DELIM$
1410  IF SEP$ = "Q" OR SEP$ = "q" THEN PRINT #2,CHR$(34)+AU$+CHR$(34)+",";CHR$(34)+
      ---TI$+CHR$(34)+",";CHR$(34)+SO$+CHR$(34)+",";CHR$(34)+DE$+CHR$(34)+
      ---(sp)DELIM$ 'quote and commas
1420  IF SEP$ = "T" OR SEP$ = "t" THEN PRINT #2,AU$+CHR$(9);TI$+CHR$(9); SO$+CHR$(9);
      ---DE$+DELIM$ 'tabs between fields
1430  IF DISP$ = "Y" OR DISP$ = "y" THEN COLOR 8,15 :LOCATE 9,1 : PRINT AU$ : LOCATE 12,1 :
      ---(sp)PRINT TI$ : LOCATE 16,1 : PRINT SO$ : LOCATE 20,1 : PRINT DE$: COLOR 15,0
1440  A1$ = " ": A2$ = " ": T1$ = " ": T2$=" ": T3$ = " ": S1$ = " ": S2$ = " ": AU$ =
      ---(sp)" ": TI$ = " ": SO$ = " ": D1$ = " ":DE$ = " "
1450  LOCATE 24,70 : PRINT "          ";: RETURN
1460  '
1470  'ERROR TRAP ROUTINE
1480  '
1490  IF ERR = 5 AND ERL = 1100 THEN LOCATE 24,1 : COLOR 8,15 : BEEP : PRINT "You have
      ---(sp)not allowed enough space for incoming AUTHOR data. Start over!";: CLOSE : FOR
      ---(sp)DELAY = 1 TO 1500 : NEXT DELAY : RESUME 60
1500  IF ERR = 5 AND ERL = 1110 THEN LOCATE 24,1 : COLOR 8,15 : BEEP : PRINT "You have
      ---(sp)not allowed enough space for incoming TITLE data. Start Over!;": FOR DELAY = 1 TO
      ---(sp)1500 : NEXT DELAY : RESUME 60
1510  IF ERR = 5 AND ERL = 1120 THEN LOCATE 24,1 : COLOR 8,15 : BEEP : PRINT "You have
      ---(sp)not allowed enough space for incoming SOURCE data. Start Over!";: FOR DELAY = 1
      ---(sp)TO 1500 : NEXT DELAY : RESUME 60
1520  IF ERR = 53 THEN LOCATE 24,1 : COLOR 8,15 : PRINT " FILE NOT FOUND. ";: FOR DELAY =
      ---(sp)1 TO 1500 : NEXT DELAY : RESUME 60
1530  LOCATE 23,1 : COLOR 8,15 : PRINT "ERROR LINE: ";ERL : PRINT "ERROR NUMBER (check
      basic manual): ";ERR;"  ": FOR DELAY =1 TO 1500 : NEXT DELAY : RESUME 60
9999  END
```

Editor's note: We have occasionally broken program lines to fit column width. Any line that begins with --- is a continuation of the preceding line. When entering the code into your computer, continue to type the marked line (leaving out the ---) on the same line as the line above it. If a space is critical where the line breaks, the continuation begins ---(sp). Continue to type the marked line, leaving out the ---(sp), but insert the space.

Communications to the author should be addressed to Clyde W. Grotophorst, Systems Librarian, Fenwick Library, George Mason University, 4400 University Drive, Fairfax, VA 22030; 703/323-2317.

ELECTRONIC MAIL FOR THE ONLINE PROFESSIONAL: A REVIEW OF DIALMAIL

by Monica Ertel
Manager, Information Services
Apple Computer, Inc.
and
Norman Kline
Communications and Networking Group
Apple Computer, Inc.

"You need it when . . .?"

How often have you completed a literature search on DIALOG which contained many good citations that would cost a small fortune to print online or send to disk,—*but your client wants it by tomorrow?*

You have several options. 1) You could abandon all sense of frugality and pay the price. 2) You could tell your client you can't get the information for several days while you wait for offline prints to appear in the U.S. Mail. 3) You could simply print your search offline and pick it up tomorrow morning at a greatly reduced cost via DIALMAIL.

This article will describe some of the features of DIALMAIL as well as actual examples of how one library uses this electronic mail system. Included will be a personal look at this system's advantages and disadvantages.

ABOUT DIALMAIL

DIALOG Information Services designed and built DIALMAIL not as a competing mail service to MCI or any other major electronic mail system, but as a means for providing an additional information delivery mechanism. DIALMAIL was designed to complement DIALOG's TYPE and PRINT commands, providing a third mechanism for the inexpensive and timely delivery of Prints and SDIs. Another reason for creating DIALMAIL was to provide a communication forum so that the DIALOG community could communicate easily using one service. This community includes database producers, document suppliers, DIALOG customers, and the DIALOG staff and departments.

DIALOG's goals were to design not just a messaging system but an information delivery vehicle and an environment where customers and producers could communicate in a powerful and flexible manner. The system had to be easy to use, since most users would infrequently use the service, require little training, and contain sophisticated messaging capabilities including distribution lists, conferences, bulletin boards, prompting forms, and an online directory.

Several versions of DIALMAIL were developed and tested before the present product

was released to Knowledge Index customers in April 1985. Enhancements to the product continued to be introduced up to November 1985 when the product was made available to all DIALOG customers. DIALOG and Knowledge Index customers use the same service and can communicate with each other freely.

SYSTEM CAPABILITIES

Access

DIALMAIL is automatically available to all DIALOG users through a separate service ID at the network level. Knowledge Index users have the additional convenience of entering **BEGIN MAIL** to enter the service from within Knowledge Index. The service is available through all major networks including DIALNET, TYMNET, Telenet, and DATAPAC. The service is available at 300, 1200, and 2400 baud.

Although DIALMAIL is available to all DIALOG users, the actual DIALMAIL account (i.e. Inbox and Profile) is not created until the customer logs on and completes an online registration procedure.

DIALMAIL is priced at $12.00 an hour plus telecommunication charges. Knowledge Index users only pay the connect rate but cannot access the service during prime-time. Regular DIALOG passwords that are not part of a discount contact have an annual service fee of $25.00. Each DIALOG or Knowledge Index account has one Inbox and Profile. Additional DIALMAIL-only accounts can be obtained at $25.00 each. These DIALMAIL only passwords may be linked to the main DIALOG account for billing purposes.

User Interfaces

DIALMAIL uses a menu-driven interface and desktop metaphors for object names such as the Inbox, Folders, and Desktop. Verbs such as **SCAN, READ** and **PRINT** are used to take action on the objects.

A new user starts using the service with LONG menus. The example below shows the main menu screen after logon. Notice the Message indicating mail in the inbox. Unfortunately, at this time, the user cannot enter "BEGIN MAIL" or "BEGIN DIALMAIL" from DIALOG. One must logoff and enter the DIALMAIL service I.D. to answer or create new messages.

```
WELCOME TO DIALOG

////////////////////////////////
/  Welcome to DIALMAIL         /
/                              /
/        Version 3.3           /
////////////////////////////////
```

```
DIALMAIL -- 04Sep86 18:29 EST

You have 1 item in your inbox.

You may enter:

     SCAN        to list your messages
     READ        to see your messages
     CREATE      to prepare a message or other item
     PROFILE     to change user profile
     HELP        for assistance at any time
     MENU        to return to the main menu at any time
     EXIT        to leave DIALMAIL

Your command: _
```

The length of the menus may be changed at any time by entering the command LONG, SHORT, or NONE at any menu prompt. The Short menu seems the most comfortable, giving one word for each command along a single line.

The length of the menus may be changed at any time by entering the command **LONG, SHORT**, or **NONE** at any menu prompt. The Short menu seems the most comfortable, giving one word for each command along a single line. The same main menu is shown below in SHORT mode.

```
DIALMAIL -- 04Sep86 18:29 EST

You may enter:
Scan    Read    Create    Profile    Help    Menu    Exit

Your command: c mes
```

The menu can be permanently changed in the users Profile. Each DIALMAIL user has an individual Profile which includes personal address information, DIALMAIL Account number, number of days messages are to be kept in one's Inbox, disposition of old Inbox messages and size of Menus. You may enter the Profile by entering **PROFILE** or **P** at the main menu.

```
Enter profile option:

Mail number: 100
L)ast name: Kline
F)irst name: Norman
O)rganization: Apple Computer
A)ddress: 20525 Mariani Ave.
C)ity: Cupertino
R)egion, State or Country: CA
Z)ip or Mail Code: 95014
P)ublic directory listing(Y,N): Y
S)ize of menu(Long,Short None): L
D)isplay number of lines on screen: 0
N)umber of days MSGS left in INBOX (1-30): 30
I)nbox MSG disposition (Delete, Print, File, Forward): FO
```

```
    Forward to: Kline,Norman
V)iew profile
M) return to main menu

Your Command: menu
```

Profile data may be changed by entering the first character of any item. Returning to the main menu is always accomplished in DIALMAIL by entering **MENU** or **M** at a menu prompt.

Submenus may be bypassed by stacking commands. Instead of entering **SCAN** from the main menu and receiving a list of objects to scan and then entering **INBOX**, the command **SCAN INBOX** will accomplish the same thing. If the stacked command is wrong then the last menu will appear prompting the user for the correct command.

Messages

A DIALMAIL message is always the same object no matter if it is in an Inbox, Folder, Conference, or Bulletin Board. Each message contains ASCII text up to 80 characters per line (with a Carriage Return at the end of each line), and up to 2,000 lines in length. Although no formal limit is mentioned, it seems that 2,000 lines is the practical limit for a message size.

Creating a message is done by entering the command **CREATE MESSAGE** from the main menu. A **TO:** prompt appears requesting an address. DIALMAIL addresses are self-assigned by the users and may contain a first and last name.

Addresses may be qualified with special TAGS indicating special handling of each address. The Tags include **URGENT**, **RECEIPT REQUESTED**, **DELAY DELIVERY**, **ONE-TIME READ**, and **NO-FORWARDING**. This is done by entering a bracket and the first three letters of the TAG after the address.

```
Also To: janet smith
Message addressed to: Janet Smith (urgent receipt)
Also To: __ <CR>

Subject (up to 40 char): About the Article

Enter text, ending it by typing a period on a blank line.

Dear Janet:

Please send the article you mentioned in your last communication.
I am very interested in that subject and would like further informa-
tion.

Thank You

Norman Kline


MESSAGE:   Read   Exit   Send   Cancel   File   Menu

Your command: s
One moment please
Message 53492 sent to: Janet Smith

<return to main menu>
```

A subject line is next requested. The message contents typed in text files may be uploaded at this point using the Xon/Xoff flow control protocol or a line at a time protocol with a pause between each line. There are presently no file transfer protocols such as Xmodem or Kermit supported by DIALMAIL. A period '.' on a blank line will end creating the message. A Draft Disposition menu will next allow the message to be sent, re-addressed, filed, and not sent or canceled.

Reading and Scanning Messages

Reading and scanning messages is accomplished in a like manner independent of where the message resides. Scanning always provides a table of messages or items to review. The user may then take action on the items in the table, re-scan the message, or return to the main menu. Reading immediately displays the contents of messages.

The command **SCAN INBOX** instructs DIALMAIL to display a table summary of messages in the Inbox.

```
DIALMAIL -- 04Sep86 18:34 EST

You may enter:
Scan   Read   Create   Profile   Help   Menu   Exit

Your command: Scan Inbox
2 messages found in Inbox

No.   Posted        Lines From          Subject                Type
1     SEP04 18:34   8 Norman Kline  : About the Article        Msg
                  * * Urgent Receipt Requested * *
2     SEP04 18:34   8 Tom Jones     : Weekly Report            Msg
```

The Message disposition menu allows users to either **READ ALL** or an individual message, **DELETE**, RE-SCAN the Inbox, or return to the main menu.

```
ACTION: Read, Scan, Delete, Print, Menu, Help

Your command: r all

Date:    Thursday Sep 04, 1986 18:34 EST    Msg ID: 53492
From:    Norman Kline                       Mail No: 100

To:      Janet Smith

Subject: : About the Article

Dear Norman:

Please send the article you mentioned in your last communication.
I am very interested in that subject and would like further
information.

Thank You

Norman

Confirmation of message receipt sent to: Norman Kline

Message -- Read Answer Delete File Forward Edit Next Menu

Your command: menu
Message placed on desk
Message 53492 deleted from: Inbox
```

After reading a message, the user has an assortment of command choices including **READING**, **ANSWERING**, **FILING**, and **DELETING**. The **Next** command will display the next message in the table.

Reading or Scanning Folders is as simple as the Inbox. The user enters the command **SCAN**

FOLDER from the main menu to review all folders. **SCAN FOLDER** "folder name" views contents of a particular folder. Each new user is automatically given two folders called CORRESPONDENCE and DRAFTS. Additional Folders may be created by entering **CREATE FOLDER** from the main menu. A prompt will request the name of the folder.

Conferences / Bulletin Boards

Conferences and Bulletin Boards may also be created. A DIALMAIL conference is a many to many form of communication allowing all members to participate. A DIALMAIL Bulletin Board is a one to many communication link with only the organizer able to post messages. Both conferences and bulletin boards may be Public and are listed in a directory and are accessed by the command **SCAN PUBLIC CONFERENCES** or **SCAN PUBLIC BOARDS**. Any user may join a public conference or bulletin board. The membership of Private Conferences and Bulletin Boards are controlled by the organizer. Only those members may read and participate and it never appears in a public directory.

Forms/ILL

A Form may be created with the command **CREATE FORM**. A form is a special message that is created and stored like any other message. Within the contents of the message one can enter Prompts and input fields. The prompts are character strings ending with a colon ":". The empty field between the colon and the next character becomes the input field. When a user **ANSWERS** a **FORM** message, the user will be prompted with the prompt fields. The complete message may then be read before sending. One form may be used over and over again. The Form can be saved in a file folder for personal use or be placed on a bulletin board or conference for shared use.

A special system ILL Form has been created and can be immediately filled in by entering the command **CREATE ILL** from the main menu. After addressing, the form will request data for all fields. The ILL can then be sent and or stored like any other message.

ONE LIBRARY'S EXPERIENCE—APPLE LIBRARY USERS GROUP

The Apple Library Users Group was approached in early 1985 about beta testing a new electronic mail system from DIALOG. The Apple Library Users Group was chosen because we were a group of approximately 3,000 librarians with a need to communicate among our members. We were also a group of librarians familiar with computers and online services and comfortable with communicating electronically. In addition, the Corporate Library at Apple was interested in access to an electronic mail system which would put us in touch with a large number of other libraries for interlibrary loan and correspondence purposes.

We found that creating, reading, and sending electronic mail on DIALMAIL was fairly straightforward. Because DIALMAIL is a menu-driven system, even the novice can figure out how to send or receive a message.

Electronic Mail

We found that creating, reading, and sending electronic mail on DIALMAIL was fairly straightforward. Because DIALMAIL is a menu-driven system, even the novice can figure out how to send or receive a message. We received virtually no training on DIALMAIL and because we were beta-testing the system, began to use it without a complete user manual. Despite this, we encountered very few problems learning and using the system.

Our first use of DIALMAIL was for electronic correspondence. Approximately 20 members of the Apple Library Users Group received passwords and some of us began to "talk" to each other on DIALMAIL to share information about what we were doing in our libraries with Apple computers as well as to help solve any problems we might be having with our hardware or software.

```
DIALMAIL – 31Aug86 14:22 EST

You may enter:
Scan   Read   Create   Profile   Help   Menu   Exit

Your command: create message

To: Rosanne Macek
Message addressed to: Rosanne M. Macek
Also To:

Subject (up to 40 char): Apple Library Users Group

Enter text, ending it by typing a period on a blank line.

Rosanne,

I would like to invite you to attend a local meeting of the Apple
Library Users Group at the Cupertino Public Library on Sept. 3 from
9am to noon. Can you give a demonstration of DIALMAIL on the
MacIntosh?

Thanks and hope to see you there.

Monica

.

MESSAGE:   Read   Edit   Send   Cancel   File   Menu

Your command: send
One moment please
Message 52641 sent to: Rosanne M. Macek
```


141

The next day when DIALMAIL is checked, the following message will be found:

```
DIALMAIL -- 01Sep86 16:20 EST

You have 1 item in your inbox.

No.  Posted        Lines  From          Subject        Type
1    AUG31 14:30   7      Monica Ertel  ALUG Meeting   Msg

ACTION: Read, Scan, Delete, Print, Menu, Help

Your command: read

Date:    Sunday, August 31, 1986 14:30 EST   Msg ID: 52643
From:    Rosanne Macek                       Mail No: 117

Subject: ALUG Meeting

Hi Monica,

I would be happy to give a demonstration of DIALMAIL on a
Macintosh. I'll see you on Wednesday at 9:00.

Rosanne

Answering message:

Message -- Read Answer Delete File Forward Edit Next Menu

Your command: a

Message addressed to: Rosanne Macek

Enter a new subject or press (RETURN) to reference old subject:

Enter text, ending it by typing a period on a blank line.

Thanks Rosanne!

Monica
```

Conferences

Another way the Apple Library Users Group uses DIALMAIL is to keep its members informed through a conference called APPLE LIBRARY USERS GROUP. This conference contains the current table of contents of the most recent ALUG newsletter.

```
DIALMAIL -- 29Aug86 16:20 EST

You may enter:
Scan Read Create Profile Help Menu Exit

Your command: scan conf apple

3 messages found in APPLE LIBRARY USERS GROUP

No.  Posted        Lines  From          Subject                  Type
1    AUG29 16:20   77     Monica Ertel  July 1986 Table of Conten New
2    AUG29 16:15   165    Monica Ertel  Help Wanted              New
3    MAY30 17:29   5      A. Robinson   Cataloging with Micros.  Old

ACTION: Read, Scan, Delete, Print, Menu, Help

Your command: read 1

Date:    Friday Aug 29, 1986 16:20 EST       Msg ID: 52527
From:    Monica Ertel                        Mail No: 116

Subject: July 1986 Table of Contents

Apple Library Users Group Newsletter
          July 1986

        TABLE OF CONTENTS

Letters to the Editor

Apple Template Exchange Update

Apple Library Users Group Meeting Report
     by Eric Anderson

News From/About Apple

General Information

Apple II and /// Magazines
     byJane Oros

Help Found!

Help Wanted!

FOR COPY OF NEWSLETTER, PLEASE SEND MAILING ADDRESS TO:

          DIALMAIL -- MONICA ERTEL
                      or
          APPLE LIBRARY USERS GROUP
          10381 BANDLEY DRIVE
          CUPERTINO, CA 95014
```

This conference also contains a question and answer section where members can post questions or answer queries for all members to share.

Offline Prints

As stated in the opening to this article, DIALMAIL is a great vehicle for receiving prints from DIALOG2. We can use this feature in our library when a user needs the offline within twenty-four hours. Once our search is complete, we simply type in the command **print 1/5/1-25 via DIALMAIL**. The next morning we logon to DIALMAIL and find our search results waiting for us to download at $12 an hour as opposed to the $65 or $90 or higher per hour cost if we had downloaded it the day before. We can also request that SDIs be send to us on DIALMAIL, allowing us to receive this current information as soon as possible and in a form which allows us to edit it using word processing software and print it on a Laserwriter. In this manner, we can produce Current Awareness Bulletins which not only get to our patrons in a more timely way, but also can be customized and printed on library letterhead instead of the customary DIALOG printout.

```
Welcome to DIALOG
DIALOG version 2, level 9.1.9

File275:COMPUTER DATABASE 83-86/Iss15
(COPR. 1986 INFORMATION ACCESS COMPANY)

     Set     Items     Description

? smacintosh and library

             3107      MACINTOSH
             2081      LIBRARY
     1         48      MACINTOSH AND LIBRARY

? print 1/5/1-48 VIA DIALMAIL
P337: PRINT 1/5/1-48 VIA DIALMAIL est. cost of $11.00
```

(NEXT MORNING THIS APPEARS IN THE DIALMAIL INBOX)

```
Enter Service: DIALMAIL

DIALNET: call connected

DIALOG INFORMATION SERVICES
PLEASE LOGON:
```

```
********

Welcome to DIALOG

//////////////////////////////////

/  Welcome to DIALMAIL  /
/                       /
/       Version 3.3     /

//////////////////////////////////

DIALMAIL -- 30Aug86 13:42 EST

You have 1 item in your inbox.

No.  Posted      Lines  From          Subject          Type
1    SEP02 02:18  455  Apple         File 275:        Prts
                        Library       COMPUTER
                                      DATABAS

You may enter: Scan Read Create Profile Help Menu Exit

Your command: Read Inbox

Date:     Tuesday Sep 02, 1986 02:18 EST     Msg. ID: 52732
From:     Apple Library                      Mail No:

To:       Apple Library
Subject: File 275:COMPUTER DATABASE 83-86/ISS15 (COPR. 1986
INFORMATION ACCESS

File(s) searched:

File 275:COMPUTER DATABASE 83-86/ISS15 (COPR. 1986
INFORMATION ACCESS COMPANY)

  Sets selected:

    Set     Items     Description

     1        48      MACINTOSH AND LIBRAR?

Prints requested ('*' indicates user print cancellation) :

    Date    Time      Description

    01sep   14:15EST  P337: PR 1/5/1-48 VIA DIALMAIL

Total items to be printed: 48

P337: PR 1/5/1-20 VIA DIALMAIL

DIALOG File 275: COMPUTER DATABASE 83-86/ISS15 (COPR. 1986
IAC)
```

Interlibrary Loan

Almost every library has access to DIALOG. It is probably one of the most popular online information services available. I had often thought that it would be great to be able to communicate with all of these users. DIALMAIL makes this possible. One of the major advantages of DIALMAIL is that this opens up a whole new avenue for obtaining interlibrary loans. Using DIALMAIL, one can send out requests for articles and other materials to any other library using this system. To make this procedure even easier, DIALMAIL has devised an interlibrary loan form which prompts the user for information. Unfortunately, there is no union list available telling users what journals are available in participating libraries, but this ILL feature does give one access to quite a large number of libraries which can be scanned in the public directory.

```
DIALMAIL -- 29 Aug86 17:01 EST

You have 1 item in your INBOX

You may enter:

Scan Read Create Profile Help Menu Exit

Your command: scan inbox

1 message found in inbox

No.  Posted      Lines  From          Subject          Type
1    AUG29 16:38   36   Monica Ertel  ILL Request      ILL

ACTION: Read, Scan, Delete, Print, Menu, Help

Your command: read

To: Bob Wilson
Subject: ILL Request

INTERLIBRARY LOAN FORM

                Requesting Inst:  Apple Computer, Inc.
                        Library:  Corporate Library
                        Address:  10381 Bandley Drive
                  City/State/Zip: Cupertino, CA 95014

      Lending Lib code: SAMPL
    Borrowing Lib code: APPLE
            Request No: 1234                  Date: August 29, 1986
          For use of: Janet Smith           Status: Rush
        Need Before: September 1, 1986  Max Cost: $10.00

Book author: OR periodical title, vol/issue/date.
InfoWorld, vol. 8, no. 34, August 25, 1986

Book title, edition, place, year, series: OR periodical author, title,
pages.
Mace, Scott, Ashton Tate Removes All Protection on Products.
Page 1, 8.

Verified in: OR Item cited in
Computer Database
          ISBN or ISSN:  n/a        OCLC acc no:  n/a
            LC call no:  n/a         RLN acc no:  n/a
        DIALOG File no:  275     DIALOG acc no:  n/a

Copyright Compliance (CCG/CCL): CCG

          Authorized by:  Monica Ertel
                  Title:  Librarian
Comments

If possible, please send RUSH. Thanks!
```

CONCLUSION

An additional feature which I really appreciate, as editor of the ALUG Newsletter, is the ability to have members send me their articles via DIALMAIL which I can then download into my word processor and edit without having to retype the entire article. Overall, we've found DIALMAIL to be an excellent communication vehicle for correspondence between Apple Library User Group members and to quickly share information among our members.

Strengths

DIALMAIL has many strong and competitive features and the product is positioned well as a mail system for online information professionals. Its strengths include:

1. It is accessible through a large number of domestic and international communication networks.
2. The product is relatively inexpensive. The connect charge of $12.00 an hour plus communication costs of the specific network being used is very competitive. Knowledge In- ►

dex users do not get charged a communication fee, reducing the total charge to $12.00 an hour. Regular DIALOG passwords that are not part of a discount contract have an annual service fee of $25.00.

3. The potential user base of DIALMAIL is quite impressive, including database producers, document suppliers, all DIALOG customers, and the DIALOG service departments and training staffs.
4. It is easy to use. Most of the DIALMAIL features are easy to learn and easy to use. New users are eased into the system through the use of menus. More experienced users may shorten and bypass menus.
5. Their are no limitations on the size of DIALMAIL messages (although 2,000 lines of text seems to be the practical limit), which is nice for transferring large text files.
6. Addressing messages by using conventional user-friendly names as well as unique numbers is a strength of the system as well as the personal directory capability for setting up alias names.
7. The feature to deliver SDIs and Prints through the DIALMAIL Inbox deserves special recognition. This service represents a new alternative to the traditional immediate delivery with the **TYPE** command or longer delayed delivery of **PRINTS**.
8. A feature that is somewhat hidden is the **FORMS** facility, allowing messages to be prepared sent or stored as a **FORM**. This is potentially a very useful information gathering tool for a large variety of customer needs.

Weaknesses

1. There is no direct access to DIALMAIL from DIALOG or DIALOG2.
2. There is no file transfer protocol support such as Xmodem or Kermit.
3. The Conference and Bulletin Board system is a powerful feature but needs work in its user interface and the processes for hosts to create and manage files.
4. There is presently no full user's manual for the system. Since the service has many features, the brief manual provided is not capable of providing the needed explanations.
5. It would be nice for DIALMAIL to have a message interchange service to other electronic systems including MCI, EASYLINK, and ALANET. This would allow a user to communicate across mail services without additional accounts or additional logons.
6. The SDI and Print delivery feature needs an option to number records in the message. These item numbers are no longer needed and stripped off of normal prints. When the same prints are delivered through electronic means, the item numbers are useful again in order to verify that all items have been received or to tell the receiver how many items are left during downloading.
7. The response time after hitting a carriage return (while keystroking a message on the system) is slow. For fast (and even not so fast) typists, character strike-over is unavoidable.

DIALMAIL is the logical extension of DIALOG's product line, complementing its information retrieval services. It is a friendly, easy to use and inexpensive system with a built-in membership of tens of thousands of users. The challenge is getting more people to take advantage of this practical system—which is the goal of every new electronic mail product.

THE AUTHORS

MONICA ERTEL is Manager of Information Services at Apple Computer. She was hired to organize a library for Apple in 1981. She also coordinates the activities of the Apple Library Users Group and publishes a quarterly newsletter for this organization which currently has over 7,000 members.

NORMAN KLINE works in the Communications and Networking Group at Apple Computer, Inc. He also owns CASPR, a library software development company. Before joining Apple, Norman worked at DIALOG Information Services, Inc. for over six years, leaving that company after two years in the Advance Technology Group.

Communications to the authors should be sent via DIALMAIL or addressed to Apple Computer, Inc., 20525 Mariani Avenue, Cupertino, CA 95014.

SOURCE CODE

by Paul W. Kittle
Director of Medical Libraries
Adventist Health Systems
Loma Linda

COMPUTERIZED ILL'S

Processing Inter-Library Loans is often a tiresome task, with paperwork abounding. Wouldn't it be nice to enter the data once and have the computer do the work? Why not use the computer to keep track of who sent what to whom? Why not let the computer keep track of who asked for what and where they are located. Why not use the computer to determine automatically what journals are requested most often by which department.

A program to do all these things and more would run beyond the scope of a regular column. However, a core routine that allows for expansion is presented this month, with a few enhancements to be presented in the next issue. This issue's column deals with using dBASE II to prompt for an ILL screen, then offer the options of typing it out hardcopy to the ILL form (tractor feed) on three different printers, or write it to an ASCII text file, which can be transmitted via CLASS OnTyme using the public domain software called "QMODEM." With the CLASS file, this routine will actually send to the specified recipients in one batch file, i.e., the familiar :send XXXXX is built right into the file, removing the necessity of the operator's input online. The file is simply uploaded, and sends off the ILL requests to the various holders automatically during the file upload. Although the following code is written in dBASE II, it can fairly easily be translated to dBASE III or III+ by using the program "DCONVERT" that comes with dBASE III, or III+, and altering any upgrades in syntax.

By now, I hope the readers have collected all the back issues of *DATABASE* in which this column has appeared, since there will be references to code and files described in previous columns. (You are a subscriber, aren't you?) The graphic characters, borders, drive specifications, date reference, and other items are found in preceding columns.

Other features can be added to the ILL routine, which could include look-up, delete, statistics, and so forth. There is room in the code for addition of such features.

This structure tracks most of the pertinent ILL data for the librarian, including requester's name, phone and department. Most of the information needed for simple ILL statistics can be retrieved through the use of these fields.

Use of the **SET ALTERNATE TO <file name>** and **SET**

ALTERNATE ON can be used by the dBASE programmer for Messages on CLASS, as well as ILL requests. The reader is encouraged to try it on other systems other than CLASS, although I cannot insure that it will function in the same manner.

Fine tuning for your particular institution may be required, but this sample ILL program should provide the beginner with a skeleton upon which to build a useful ILL tracking routine.

The next column will explain a little more about what is going on in the code presented below. The following code is part 1 of the ILL.PRG program. It contains enough code to run. The next column will contain portions that can be inserted to expand some of the features.

In order to let this program automatically fill in your own institution's name and address, add the following to your .DBF file called "DATER.DBF." (see *DATABASE*, October 1986):

```
INSTNAME,C,40
INSTSTREET,C,40
INSTCITY,C,20
INSTSTATE,C,2
INSTZIP,C,5
```

The structure of the ILL.DBF file is as follows:

STRUCTURE FOR FILE: C:ILL .DBF
NUMBER OF RECORDS: 00000
DATE OF LAST UPDATE: 07/20/86
PRIMARY USE DATABASE

FLD	NAME	TYPE	WIDTH	DEC
001	SENT	N	001	
002	REC	C	001	
003	RECDATE	C	008	
004	TYPE	C	002	
005	DATES	C	008	
006	NDAT	C	008	
007	CAL1	C	004	
008	CAL2	C	008	002
009	CAL3	C	006	
010	CAL4	C	004	
011	TITLE	C	051	
012	MTITL	C	030	
013	AUTH	C	051	
014	MAUTH	C	030	
015	CITE	C	010	
016	ISSN	C	010	
017	FNAMERQ	C	010	
018	LNAMERQ	C	015	
019	REQDEPT	C	010	
020	REQEXT	C	010	
021	REQACCT	C	004	
022	COST	C	006	
023	LIBNM	C	025	
024	LIBSTR	C	030	
025	LIBCITY	C	020	
026	LIBSTA	C	002	
027	LIBZIP	C	005	
028	CCLG	C	001	
** TOTAL **			00371	

THE SOURCE CODE:

```
* 07/24/86 ILL.PRG COPYRIGHT P.W.KITTLE AND ONLINE, INC.
* WRITTEN IN DBASE II (NOT III OR III+ PLEASE NOTE THIS!)
* USE 'DCONVERT' TO TRANSLATE TO DBASE III
* WRITES TO CLASS ONTYME USING QMODEM, ASCII PROMPTED, CR
* FOR PROMPT
* PRINTER OPTION, TOSHIBA, EPSON RX SERIES, IBM-QUIETWRITER
* GRAPHIX.PRG AND DATER.DBF ARE SHOWN/EXPLAINED IN
* PREVIOUS ARTICLES
* BORDER*.PRG FILES ARE FROM THE OCTOBER ISSUE OF DATABASE
USE DATER
STOR '  ' TO LI
STOR GD2 + ':ILL' TO LIDBF
DO WHIL .NOT. FILE (&LIDBF)
STOR '0' TO LR
@ 15,5 SAY CHR(7)
STOR ' THE ILL ' TO L
DO BORDER3
@ 21,1 SAY G2 + '  ' + G3
@ 21,16 GET L
@ 22,3 GET G4
SET CONS OFF
WAIT TO LR
SET CONS ON
IF LR#'  '
RETU
ENDI
ERAS
ENDD
USE
SET COLO OFF
STOR '0' TO LH
DO WHIL LH # 'N'
ERAS
STOR GD2 + ':ILLTITL' TO LINDX1
STOR GD2 + ':ILLREQU' TO LINDX2
STOR ' [F] ill ' TO LQ1
STOR ' [P] rint ' TO LQ2
STOR ' [W] rite ' TO LQ6
USE DATER
DO WHIL LI # 'A'
DO BORDER7
STOR ' Inter-Library Loan Module ' TO LL
@ 1,22 SAY CHR(273) + CHR(179)
@ 1,51 SAY CHR(179) + CHR(272)
@ 1,24 GET LL
@ 2,20 SAY INSTNAME
@ 3,1 SAY G21+G20+G30+G30+G30+G30
RELE LL,LINST,LNM,LSTR,LZPLN
@ 4,14 GET LQ1
@ 4,26 SAY ' - out ILL form on Screen '
@ 5,14 GET LQ2
@ 5,26 SAY ' - out ILL forms on Printer '
@ 6,14 GET LQ6
@ 6,26 SAY ' - ILL data to an E-MAIL file
@ 11,17 SAY '<RETURN>'
@ 11,33 SAY '< to Main Menu >'
CLEA GETS
DO BORDER3
@ 22,10 SAY ' Please press the      letter of the command you wish'
STOR 'FIRST' TO LQ6
@ 22,26 GET LQ6
SET CONS OFF
WAIT TO LMD
SET CONS ON
IF LMD = '  '
RELE ALL LIKE L*
RETU
ENDI
```

►

```
STOR ! (LMD) TO LMD
DO CASE
CASE LMD = 'F' .OR. LMD = 'P' .OR. LMD = 'W'
STOR 'A' TO LI
OTHE
@ 22,4 SAY CHR(07)
@ 22,10 SAY '          PLEASE PRESS ONE OF THE KEYS INDICATED
---(sp)ABOVE!                '
ENDC
ENDD
STOR '0' TO LR
@ 22,3 SAY '(64 spaces)  '
DO CASE
CASE LMD = 'F'
RELE LQ1, LQ2, LQ3, LQ4, LQ5, LQ6
STOR '     ILL ENTRY DATA:        ' TO LPE
STOR 'N' TO LRQ
@ 22,10 SAY ' (14 spaces) Loan or Photocopy? (L/P) (23 spaces) '
SET CONS OFF
WAIT TO LBP
SET CONS ON
STOR !(LBP) TO LBP
ERAS
DO BORDER1
DO BORDER2
DO BORDER3
@ 1,23 SAY GM1
@ 1,46 SAY GM1
@ 2,23 SAY G24
@ 2,25 GET LPE
@ 2,46 SAY G24
@ 3,23 SAY G25+G21+G30+G21+G21+G26
RELE LPE
CLEA GETS
@ 5,40 SAY 'Latest Date Needed?:'
@ 6,40 SAY 'Highest Cost:'
DO WHIL LRQ # 'Y'
IF LBP = 'L'
@ 4,2 SAY 'Call Number Line 1     :'
@ 5,2 SAY 'Call Number Line 2     :'
@ 6,2 SAY 'Call Number Line 3     :'
@ 7,2 SAY 'Call Number Line 4     :'
@ 7,40 SAY '          ISBN:'
@ 8,2 SAY 'Book Title             :'
@ 9,2 SAY 'Edition or Series      :'
@ 10,2 SAY 'Book Author           :'
@ 11,2 SAY 'Year of Publication   :'
ELSE
@ 4,2 SAY (33 spaces)
@ 5,2 SAY (33 spaces)
@ 6,2 SAY (33 spaces)
@ 7,2 SAY (33 spaces)
@ 7,40 SAY '      ISSN:'
@ 8,2 SAY 'Title of Journal       :'
@ 9,2 SAY 'Article Title & Pages:'
@ 10,2 SAY 'Author of Article     :'
@ 11,2 SAY 'Journal Year & Volume:'
ENDI
@ 12,2 SAY "Requester's 1st Name  :"
@ 12,36 SAY 'Citation from:'
@ 13,2 SAY "Requester's Last Name:"
@ 14,2 SAY "Requester's Dept.          :"
@ 15,2 SAY "Requester's Ext.           :"
@ 15,40 SAY "Requester's Acct #:"
@ 16,2 SAY "Library Name               :"
@ 17,2 SAY "Library Street             :"
@ 18,2 SAY 'Library City               :'
@ 19,2 SAY 'Library State              :'
@ 20,2 SAY 'Library Zip Code           :'
@ 20,40 SAY 'CCG? (Y/N)-->No=CCL:'
STOR 'N' TO LRQ
IF LBP='L'
STOR 'Y' TO LLTY
ELSE
STOR 'N' TO LLTY
ENDI
USE &LIDBF INDE &LINDX1, &LINDX2
CLEA GETS
STOR 0 TO LLST
STOR '   ' TO LLCC
STOR '      ' TO LLIBA
STOR '         ' TO LLC1,LLC4
STOR '            ' TO LLIBP
STOR LLIBA+LLC1 TO LLC3,LLCO
STOR '         ' TO LLCI, LLFNQ,LLIN,LLREPT,LLREXT,LLRECT
STOR '      ' TO LLC2,LLND
STOR '            ' TO LLNQ
STOR LLIN+LLIN TO LLIBY
STOR LLIN+LLIN+LLIN TO LLIBR
STOR LLNQ+LLIN TO LLIBN
STOR LLIBR+LLIBY TO LLTI,LLAU,LLMT,LLMA
IF LBP = 'L'
@ 4,24 GET LLC1
@ 5,24 GET LLC2
@ 6,24 GET LLC3
@ 7,24 GET LLC4
ENDI
@ 5,60 GET LLND
@ 6,56 GET LLCO
@ 7,56 GET LLIN
@ 8,24 GET LLTI
@ 9,24 GET LLMT
@ 10,24 GET LLAU
@ 11,24 GET LLMA
@ 12,24 GET LLFNQ
@ 12,50 GET LLCI
@ 13,24 GET LLNQ
@ 14,24 GET LLREPT
@ 15,24 GET LLREXT
@ 15,60 GET LLRECT
@ 16,24 GET LLIBN
@ 17,24 GET LLIBR
@ 18,24 GET LLIBY
@ 19,24 GET LLIBA
@ 20,24 GET LLIBP
@ 20,60 GET LLCC
READ
IF LLTI= '          '
RELE ALL LIKE L*
RETU
ENDI
@ 22,3 SAY '(17 spaces) Is the information correct?(Y/N) (17 spaces)'
SET CONS OFF
WAIT TO LRQ1
STOR !(LRQ1) TO LRQ1
SET CONS ON
IF LRQ1 = 'Y'
APPE BLAN
REPL REC WITH 'N', RECDATE WITH 'PENDING'
REPL DATES WITH DATE( )
REPL SENT WITH LLST
REPL TYPE WITH LLTY, CAL1 WITH LLC1, CAL2 WITH LLC2, NDAT WITH
---(sp)LLND
REPL CAL3 WITH LLC3, CAL4 WITH LLC4, TITLE WITH LLTI, COST WITH
---(sp)LLCO
REPL MTITL WITH LLMT, MAUTH WITH LLMA, CITE WITH LLCI,
REPL ISSN WITH LLIN, FNAMERQ WITH LLFNQ, LNAMERQ WITH LLNQ
REPL REQDEPT WITH LLREPT, REQEXT WITH LLREXT, REQACCT WITH
---(sp)LLRECT
REPL LIBNM WITH LLIBN, LIBCITY WITH LLIBY, LIBSTA WITH LLIBA
REPL LIBSTR WITH LLIBR, LIBZIP WITH LLIBP, AUTH WITH LLAU, CCLG
---(sp)WITH LLCC
ENDI
RELE ALL LIKE LL*
@ 22,3 SAY '(17 spaces) Finished with ILL orders? (Y/N) (18 spaces)'
SET CONS OFF
WAIT TO LRQ
SET CONS OFF
STOR !(LRQ) TO LRQ
IF LRQ= 'N'
@ 22,3 SAY '(21 spaces) Loan or Photocopy? (L/P) (21 spaces)'
SET CONS OFF
```

```
WAIT TO LBP
SET CONS OFF
STOR !(LBP) TO LBP
ENDI
ENDD
CASE LMD = 'P'
@ 22,3 SAY 'TOSHIBA, EPSON RX SERIES OR IBM-QUIETWRITER?
---(sp)(T;E;Q) "X" to Exit  '
@ 22,19 SAY CHR(07)
SET CONS OFF
WAIT TO LPRNT
STOR !(LPRNT) TO LPRNT
SET CONS ON
IF LPRNT = 'T' .OR. LPRNT = 'E' .OR. LPRNT = 'Q'
@ 22,3 SAY '(22 spaces) Ready to Print? (Y/N) (22 spaces)'
SET CONS OFF
WAIT TO LRZ
STOR !(LRZ) TO LRZ
IF LRZ = 'Y'
SET PRIN ON
DO CASE
CASE LPRNT = 'Q' .OR. LPRNT = 'E'
* SET PAGE LENGTH TO 30 FOR IBM QUIETWRITER AND EPSON RX
---(sp) SERIES
? CHR(27) + CHR(67) + CHR(30)
CASE LPRNT = 'T'
* THE FOLLOWING IS THE TOSHIBA 1350/1351 SETTING: MUST BE 30
---(sp)LINE LENGTH.
? CHR(27) +CHR(70) +CHR(51) +CHR(48)
ENDC
SET PRIN OFF
SET FORM TO PRIN
EJEC
SET FORM TO SCRE
SET CONS ON
@ 22,3 SAY '(13 spaces) Line up FORM, then press RETURN or ENTER
---(13 spaces)'
SET CONS OFF
WAIT TO LRZ
SET CONS ON
USE DATER
STOR INSTNAME TO LNM
STOR INSTSTREET TO LSTR
STOR INSTCITY + '  ' + INSTSTATE + '  ' + INSTZIP TO LZPLN
STOR 2 TO LN
USE &LIDBF
DO WHIL .NOT. EOF
SET FORM TO PRIN
IF SENT=0
STOR 1 TO LSENT
IF TYPE = 'Y'
@ LN,8 SAY 'X'
ELSE
@ LN,18 SAY 'X'
ENDI
@ LN,37 SAY DATES USIN 'XXXXXXXX' (8 X's)
@ LN,60 SAY NDAT USIN 'XXXXXXXX' (8 X's)
@ LN+3,2 SAY CAL1 USIN 'XXXX'
@ LN+3,15 SAY LNM USIN 'XXXXXXXXXXXXXXXXXXXX'(40 X's)
@ LN+4,2 SAY CAL2 USIN 'XXXXXXXX' (8 X's)
@ LN+4,15 SAY LSTR USIN 'XXXXXXXXXXXXXXXXXXXX' (40 X's)
@ LN+5,2 SAY CAL3 USIN 'XXXXXX' (6 X's)
@ LN+5,15 SAY LZPLN USIN 'XXXXXXXXXXXXXXXXXXXX' (29 X's)
@ LN+6,2 SAY CAL4 USIN 'XXXX'
@ LN+9.27 SAY TRIM(LNAMERQ)+'  '+REQEXT USIN 'X' (33 X's)
@ LN+11,2 SAY TITLE USIN 'XXXXXXXXXXXXXXXXXXXX' (51 X's)
@ LN+12,2 SAY MTITL USIN 'XXXXXXXXXXXXXXXXXXXX' (30 X's)
@ LN+14,2 SAY AUTH USIN 'XXXXXXXXXXXXXXXXXXXX' (51 X's)
@ LN+15,2 SAY MAUTH USIN 'XXXXXXXXXXXXXXXXXXXX' (30 X's)
@ LN+16,16 SAY CITE USIN 'XXXXXXXXXX' (10 X's)
@ LN+17,36 SAY ISSN USIN 'XXXXXXXXXX' (10 X's)
@ LN+18,24 SAY COST USIN 'XXXXXX'
@ LN+20,4 SAY LIBNM USIN 'XXXXXXXXXXXXXXXXXXXX' (25 X's)
@ LN+21,4 SAY LIBSTR USIN 'XXXXXXXXXXXXXXXXXXXX' (30 X's)
@ LN+22,4 SAY LIBCITY+'  '+LIBSTA+'  '+LIBZIP USIN
---'XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX' (29 X's)
IF CCLG='Y'
@LN+25,0 SAY 'X'
ELSE
@LN+25,20 SAY 'X'
ENDI
REPL SENT WITH LSENT
ENDI
SKIP
ENDD
EJEC
USE &LIDBF INDE &LINDX1, &LINDX2
REIN
SET FORM TO SCRE
SET PRIN OFF
SET CONS ON
ENDI
@ 22,3 SAY '(66 spaces)
ENDI
CASE LMD='W'
SET ALTE OFF
STOR GD2 + ':ILL' TO LEMAIL
@ 22,10 SAY '(41 spaces)
DO BORDER3
@ 22,3 SAY '(16 spaces) Ready to WRITE ILL to EMAIL file?
---(sp)(Y/N) (11 spaces)
SET CONS OFF
WAIT TO LRZ
SET CONS ON
STOR !(LRZ) TO LRZ
IF LRZ = 'Y'
@ 22,3 SAY '(18 spaces) Ok, I'll be writing it to: ILL.TXT (13 spaces)'
SET CONS OFF
IF FILE('&LEMAIL')
DELE FILE LIKE &LEMAIL
SET CONS ON
ELSE
@ 22,3 SAY '(20 spaces) Creating "ILL.TXT" file Now. . .(16 spaces)
ENDI
SET CORS OFF
SET ALTE TO &LEMAIL
CLEA GETS
USE DATER
STOR INSTNAME TO LNM
STOR INSTSTREET TO LSTR
STOR INSTCITY + '  ' + INSTSTATE + '  ' + INSTZIP TO LZPLN
STOR 2 TO LN
USE &LIDBF
STOR CCLG TO LCCLG
STOR CITE TO LCITE
DO WHIL .NOT. EOF
IF SENT=0
DO BORDER8
@ 13,5 SAY TITLE
@ 14,5 SAY MAUTH
STOR '(10 spaces)' TO LMCODE
STOR '(63 spaces)' TO LNOT1
STOR '(40 spaces)' TO LPUBR
STOR '(26 spaces)' TO LAUTR
@ 15,20 SAY 'Send this to what E-Mail Code:'
@ 15,53 GET LMCODE
IF TYPE = 'Y'
@ 16,5 SAY 'Publisher:  '
@ 16,18 GET LPUBR
ELSE
@ 16,5 SAY '  (62 spaces)
ENDI
@ 17,5 SAY 'Authorized by:  '
@ 17,22 GET LAUTR
@ 18,5 SAY 'Notes:  '
@ 19,5 GET LNOT1
READ
STOR !(LMCODE) TO LMCODE
STOR TRIM(LMCODE) TO LMCODE
CLEAR GETS
STOR 1 TO LSENT
```

►

```
IF TYPE = 'Y'
STOR 'LOAN' TO LTYPE
ELSE
STOR 'PHOTOCOPY' TO LTYPE
ENDI
SET ALTE ON
? ' '
? ' '
? '  Patron:   ' + TRIM(FNAMERQ) + ' ' +  TRIM(LNAMERQ)
? 'Max.Cost:   ' + COST
? '  Need by: '+ NDAT
? ' '
? '     au: ' + AUTH
IF TYPE = 'Y'
? '     ti: ' + TITLE
? '     ed: ' + MTITL
? '     pub: ' + LPUBR
ELSE
? ' jrl ti: ' + TITLE
? 'art/pgs: ' + MTITL
ENDI
? '     date: ' + MAUTH
? '     type: ' + LTYPE
? ' '
? '     ver: ' + CITE
DO CASE
CASE LCCLG = 'Y'
? 'Compiles: CCG'
CASE LCCLG = 'N'
? 'Compiles: CCL'
ENDC
? 'Notes: '+ LNOT1
? ' '
? 'Authorized by: ' + LAUTR
? ' '
'=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-='
? ' '
? 'Send To: '+ LNM
? '          ATTEN: LIBRARY ILL DEPARTMENT '
? '          ' + LSTR
? '          ' + LZPLN
? ' '
? ':SEND ' + LMCODE
SET ALTE OFF
REPL SENT WITH LSENT
ENDI
SKIP
ENDD
USE &LIDBF INDE &LINDX1, &LINDX2
REIN
ENDI
@ 22,18 SAY '(48 spaces)
ENDC
DO BORDER3
@ 22,10 SAY CHR(07)
@ 22,3 SAY '(12 spaces) Continue ILL Housekeeping and/or Input?
--(15 spaces)'
SET CONS OFF
WAIT TO LH
SET CONS ON
STOR ! (LH) TO LH,LI
SET ALTE TO
ENDD
RELE ALL LIKE L*
USE
QUIT *(DELETE THIS LINE IF USE THE NEXT COMMAND 'RETU'
* RETU (REMOVE THIS PORTION IN PARENS & '*' IF USED AS A
(--sp)MODULE)
```

The format used by the CLASS upload file is one recommended by CLASS for use in a commercial program. An example is presented below:

```
      Patron:   John Jones
   Max. Cost:   5.50
     Need by:   03/01/87

          au:   P. Kittle
      jrl ti:   Database
    art/pgs:    Source Code: . . .Converting NLM Data pp. 89-91
        date:   1986 Vol 9 Num. 2
        type:   PHOTOCOPY

         ver:   Cur.Cnts
    Compiles:   CCG
Notes: THIS IS AN EXAMPLE OF THE EMAIL DATA FOR CLASS USING
(--sp)SOURCECODE

Authorized by: P.KITTLE

=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=

Send To: LOMA LINDA U. MED.CENTER LIBRARY
         ATTEN: LIBRARY ILL DEPARTMENT
         P.O. BOX 2000
         LOMA LINDA, CA 92354
(:SEND LLU/MC)*
```

* Note: I have placed this in parenthesis because the first time I transmitted this to *DATABASE* via CLASS, the **:SEND** command sent the column back to my OWN mailbox! The actual code will NOT include parentheses.

Until next time, happy programming!

Editor's note: We have occasionally broken program lines to fit column width. Any line that begins with — is a continuation of the preceding line; when entering the code into your computer, continue to type the marked line (leaving out the —) on the same line as the line above it. If a space is critical where the line breaks, the continuation begins —(sp). Continue to type the marked line, leaving out the —(sp), but insert the space.

Due to our column width it has been necessary in this program to insert a comment regarding the number of spaces that should be included in some program lines when typing the program, i.e. (26 spaces). Leave the recommended number of spaces in your program line when typing it, for the best format. These comments are in italics, to distinguish them from the program content.

Neither Online, Inc. nor the author are responsible for loss of data as a result of using any published program. It is the responsibility of the end-user to verify the appropriateness of this and other "freeware" programs. NG

Communications to the author should be addressed to Paul Kittle, Director of Medical Libraries, Adventist Health Systems, Loma Linda, P.O. Box 2000, Loma Linda, CA 92354.

THE USE OF KEYBOARD MACROS IN ONLINE SEARCHING

by Christopher Soo-Guan Khoo
Reference Department
Central Library
National University of Singapore

There are many good communications packages and an increasing number of powerful front end packages on the market. Using these packages, one can store a series of search statements prior to the online session and upload the search statements automatically once connection is established with the host computer. One, however, still has to type online to interact with the remote computer because alternative strategies cannot be stored before the online session. In this article I shall show how, using available software, alternative search strategies can be stored for interactive searching. This approach involves anticipating the host computer's range of possible responses to the first query and for each of the possible responses, deciding what search statement to send next. The set of alternative search statements is keyed in before the online session and stored. The searcher chooses which statement from the set to send when online.

Storing alternative search statements before going online will result in great savings in database and telecommunication charges. This is especially true for overseas subscribers who have to pay high telecommunication charges. It will also make online searching less stressful, especially for searchers who are poor typists.

Alternative search statements can be stored either as separate disk files or as separate macros. I shall discuss only the use of keyboard macros for storing search statements. This method of storing search statements has been used at the National University of Singapore Library since the library acquired an IBM PC for online searching in April 1984.

USING KEYBOARD MACROS FOR STORING SEARCH STATEMENTS

What is a macro? A macro is a series of commands or a string of text to which a name has been assigned. Whenever the name of the macro is entered, the commands are executed or the text displayed on the screen just as if they had been entered from the keyboard. A search statement, if stored as a macro, can thus be called and sent to the host computer by entering its name, which can be as short as one alphabet letter. Thus, if we store several search statements as separate macros, each one having a different alphabet letter as its name, we can at any point during the search process select the statement to send by hitting the appropriate key.

A communications package that uses macros for storing search statements should have the following features:

- allows the user to define at least 15 macros of more than 200 characters each. One will need to store 15 or more search statements for some searches. More macros may also be needed for storing passwords, logon sequences, and often used commands. Two hundred forty characters is the maximum length of a "superselect" statement that DIALOG will accept. If the maximum length of a macro is much less than 240, the searcher will fairly often have to split a statement into two or more macros. When online he will be inconvenienced by having to remember to enter several macros.
- allows the user to print a list of created macros or display the list on the screen for proofreading.
- allows the user to store the macros in a file on disk for later use.

Other desirable features are:

- option to display the list of macros while online.
- option to create a macro while online. With this feature, one will be able to "type ahead" or key in and store a search statement while waiting for the host computer to process the previous query.
- option to edit or modify a macro while online. This will allow the searcher to make changes before sending the stored search statement.

Most of the general purpose communications packages on the market allow the user to define only ten macros, corresponding to the ten function keys on the keyboard. This number is barely enough for storing logon sequences and often used commands, let alone alternative search statements. Moreover, the maximum length of these macros is usually too short to be useful for storing search statements. The only communications package I know of that allows the user to define more than ten macros is CROSSTALK XVI.

CROSSTALK XVI (VERSION 3.6)

Features of CROSSTALK's macro processor:

250

- allows the definition of 40 macros
- maximum length of a macro is 39 characters.
- the macros can be displayed on screen both while connected to another computer and when in offline mode.
- the list of macros can be printed. There are many ways of doing this, perhaps the easiest is to first display the macros on the screen and then dump the screen on the printer with **Shift-PrtSc** (i.e., pressing the **Shift** and **PrtSc** keys simultaneously).
- Macros can be created while online.

CROSSTALK's macros have the following limitations:

- the maximum macro length of 39 characters is often not long enough for a search statement, which may have to be broken up into two or more macros.
- after a macro has been created, one cannot modify it in CROSSTALK but has to reenter the whole string. To modify a macro that has already been created, one has to exit and use an editor to edit the command file (the file with the .xtk extension).

Besides allowing us to store search statements as macros, CROSSTALK also allows us to store search statements in its "script files." CROSSTALK's script file is a program that the user can write to automate the logon process and automatically send a series of search statements. The script file can be written to send a stored search statement every time the system prompt is received from the host computer. In fact it is possible to write a script file to allow the searcher to select which of the stored search statements to send. This however requires some nifty programming and it is not as convenient as using macros.

GENERAL PURPOSE MACRO PROCESSORS

Most communications packages have very limited macro creating facility. The solution is to use a communications package in conjunction with one of the general purpose macro processors on the market. These general purpose macro processors (also known as "keyboard enhancers" and "key redefiners") allow us to create macros for use with other packages. The features that these macro processors offer can be used to great advantage in online searching. The macro processor is loaded to memory before loading the communications program. When this is done the facilities offered by the macro processor are available within the communications program.

Some of the available general purpose macro processors for the IBM PC are listed below.

ProKey (US$129.95)
RoseSoft, 4710 University Way N.E., Suite 601, Seattle, WA 98105

Keyworks (US$89.95)
Alpha Software Corporation, 30 B Street, Burlington, MA 01803

RE/Call (US$89.95)
Yes Software, Suite 390, 10991 Shellbridge Way, Richmond, British Columbia, Canada V6X3C6

Keyswap (US $79.95)
Rickerdata, P. O. Box 998, Melrose, MA 02176

SuperKey (US$69.95)
Borland International, 4113 Scotts Valley Dr., Scotts Valley, CA 95066

Smartkey (US$49.95)
Software Research Technologies, Inc., 3757 Wilshire Blvd., Suite 211, Los Angeles, CA 90010

Newkey (US$19.95)
FAB Software, P. O. Box 336, Wayland, MA 01778

Some reviews of these macro processors are listed in the references [1-9]. Before buying a macro processor, you should make sure that it is compatible with the communications package you are using.

PROKEY

Using ProKey (Version 4.0) one can assign a macro to almost any key on the keyboard or a key pressed simultaneously with the **SHIFT**, **CTRL** or **ALT** keys. A macro can also have a multicharacter name. ProKey is compatible with most programs running under PC DOS, including WordStar, dBASE II and III, CROSSTALK, Mite and DIALOGLINK. ProKey is not compatible with SMARTCOM II.

Features of ProKey:

- the macros reside in Random Access Memory.
- the macros can altogether be as large as 32 kilobytes. The maximum length of a single macro is 8000 characters.
- macros can be stored in a file on disk. ProKey disk files are standard ASCII text files and can thus be edited with a text editor.
- it is possible to merge several ProKey disk files in memory. Sets of macros can be stored in different files and later merged in memory.
- timed delays can be imbedded in the macros.
- a macro can have "fill-in-the-blanks" fields. These are imbedded pauses during which one can type in a string of characters. These fields can be of a specified length or of variable length. This feature allows us to define macros with blanks to be filled in later.
- a macro can call another macro. Several macros can refer to one macro using it as ►

an argument (the information to work on). A macro can also call itself, forming a loop. This feature is particularly useful when creating front end packages.
- a macro can be executed from a DOS batch file.
- a macro can have an annotation linked with it so that when a list of macros is displayed on the screen the annotation is displayed.

ProKey allows one to create macros in three ways:

- the interactive method. Using this method the commands you enter are executed by the program you are in, at the same time as they are being recorded and stored as a macro. For example if you are online and you create a macro using this method, whatever you store as a macro is at the same time sent to the host computer.
- using ProKey's window and editor. This window can be opened at any time even when one is online. In this window one can enter or modify a macro, or display a list of created macros.
- using a text editor to create and edit an ASCII disk file containing macro definitions. This file of macro definitions can later be loaded into memory. In this file, macro definitions are entered in this format:

  <begdef><F1> SS EXPERT SYSTEMS <enddef>

  where <begdef> and <enddef> mark the beginning and end of the macro definition. The macro **SS EXPERT SYSTEMS** is executed (i.e., sent to the host computer if you happen to be online) when the function key **F1** is entered. Macros with multicharacter names are stored in the same format:

  <begdef><TEXT> SS EXPERT SYSTEMS <enddef>

To execute a macro with a multicharacter name, one has to enter **ALT-**, (i.e., **ALT** and , keys simultaneously), then the name of the macro (in this case "**T E X T**") followed by **RETURN**. If one doesn't like **ALT-**, one can change it to some other key.

I shall discuss how the features of ProKey can be used to enhance online searching. The search statements that I use as examples will be for DIALOG Version 2 unless otherwise indicated.

Storing search statements as macros

The best way to store search statements as macros is to enter them in a disk file using a good text editor. It is not advisable to use ProKey's own window and editor because certain keys may be reserved by the communications package for commands and cannot be used for macros. ProKey's window cannot tell you what keys can be used. A disk file on the other hand can contain a list of all available keys. This file, call it the strategy file, can be preformatted for convenient inputting of the search statements. ProKey commands for defining the macros can be permanently stored in the strategy file with spaces for search statements. Here is an example of a properly formatted strategy file.

STRATEGY FILE

```
* BLANK LINE FOR ENTERING ANNOTATION, notes and instructions
<begdef><F1>
  BLANK LINE FOR ENTERING SEARCH STATEMENT 1
<enddef>

* ANNOTATION
<begdef><F2>
  SEARCH STATEMENT 2
<enddef>

* ANNOTATION
<begdef><F3>
  SEARCH STATEMENT 3
<enddef>
```

When setting up this strategy file you should find out what keys are reserved by the communications package for commands and thus should not be listed in the file. This file is loaded into memory just before going online. A printed copy of this file serves as a working sheet when online. It tells the searcher which key has been defined as which macro. During the online session, ProKey's window can be used to modify any of the macros. The window can also be used to display the list of created macros.

"Fill-in-the-blank" fields

ProKey allows us to imbed in a stored search statement, blanks that can be filled in later when online. Sometimes a search statement cannot be completely specified before going online because it has a variable part. This variable part is often a set number. Set numbers are difficult to predict before going online.

Here are examples of search statements that may require imbedded blank fields for the searcher to fill in the set numbers when online:

1. LIMIT___ /[range of accession numbers]
2. SORT___ /ALL/JN/PY,D
3. PRINT___ /5/ALL/AU/TI
4. S Term1(W)___ (F)Term2
5. S S___ (NOT F)Term1

In a ProKey disk file the blank field is represented by <vfld>...<vfld>. So

SORT___ /ALL/JN/PY,D

should be entered in the disk file as

SORT <vfld>...<vfld>/ALL/JN/PY,D

52

Hedges

The term "hedges" was coined by the National Library of Medicine Medlars Management Section for search fragments stored in the computer.[10] Hedges are useful for frequently searched topics that do not fall under a category or controlled term and which require relatively complex strategies for complete retrieval. The set of relevant citations retrieved by the search fragment can later be narrowed down to some aspect of the topic to satisfy the client's needs. Hedges thus save time and minimize errors.

It is possible to have a library of hedges, each hedge stored in a separate ProKey file. The macro files can later be merged in memory.

Common command language

ProKey can be used to some extent to translate the command language of one online service into that of another. This is done by storing the set of DIALOG commands as macros in a ProKey disk file, call it Dialog.Key, and storing the set of equivalent commands used by SDC/ORBIT in another ProKey disk file, Orbit.Key. Do this for all the other online services and we can to an extent use a common language. For instance, if **ALT-E** is defined as **EXPAND** in Dialog.Key, in Orbit.Key it will stand for **NEIGHBOR**, the equivalent command for the SDC/ORBIT system. Similarly, **ALT-D** can stand for **DISPLAY SET** in Dialog.Key and **HISTORY** in Orbit.Key.

The usefulness of this way of using a common command language is limited for the following reasons:

- One online service command language cannot be completely translated into another language. Each language has features that other online services do not have. The method described above will only give common labels to commands that work in a similar manner in the different systems.
- Different online services may offer the same facilities that have to be invoked in a different manner. For example, to search for a list of terms in a field, say the title, we use this format for DIALOG:

  S (TERM1 OR TERM2)/TI

  whereas for SDC/ORBIT we would prequalify the terms like this:

  S /TI TERM1 OR TERM2

  Merely changing the name of the command will not work in this case.

SDC/ORBIT already allows us to do the kind of simple translation described above. The command **RENAME** changes the name of a command for the duration of the search session while **SYNONYM** creates a synonym for a command. Pergamon's InfoLine has alternate names for some of its commands. For example, either **EXPAND** or **NEIGHBOR** can be used to browse the index file of a database.

Creating your own front end package

ProKey can be used to create a simple front end package. Macros can be designed to automatically formulate the appropriate search statements for the different databases and services. The example below illustrates what can be done. The ProKey file in the example is designed to format an author's name for searching in three databases—**SCISEARCH**, **ERIC**, and **BIOSIS**.

Authors' names are stored in different forms in different databases. The name CLEVERDON, CYRIL W., for example, may be stored in ERIC as CLEVERDON, CYRIL W. or CLEVERDON, C. W.

in BIOSIS as CLEVERDON C W
and, in SCISEARCH as CLEVERDON CW

The ProKey file below, call it AUTHOR.KEY, converts the author's name into the appropriate forms for searching in the three databases.

AUTHOR.KEY

The macro <AUTHOR> will be called by a batch file. It prompts the searcher for the author's name.

<FAMILY>	stores the author's family name
<FIRST1>	stores the first initial
<SECOND>	stores the second initial
<FIRST1>	and <FIRST2> together stores the author's first name

```
<BEGDEF><AUTHOR>
prompt $- <enter>
cls <enter>
ENTER AUTHOR'S FAMILY NAME and hit RETURN key <esc>
-> <begdef><FAMILY><enddef> <esc>
cls <enter>
NOW ENTER FIRST INITIAL and hit RETURN key <esc>
-> <begdef><FIRST1><enddef> <esc>
<enter>
ENTER FIRST NAME if available. If not just hit RETURN
<esc>
-> <first1><begdef><FIRST2><enddef> <esc>
cls <enter>
NOW ENTER 2ND INITIAL if available and hit RETURN key
<esc>
-> <begdef><SECOND><enddef> <esc>
prompt <enter>
cls <enter>
<ENDDEF>
```

The following macros store search statements for searching the author field in the ERIC database, BIOSIS and SCISEARCH (the latest two files). ►

```
*BIOSIS
<begdef><BIOSIS>
B5  ; S AU=<family> <first1> <second>? OR
  AU=<family> <first1><second>?; t /3/all <enter>
<enddef>

*SCISEARCH
<begdef><SCISEARC>
B34  ; S AU=<family> <first1><second>?; t /3/all  ;
B87  ; S AU=<family> <first1><second>?; t /3/all <enter>
<enddef>

*ERIC
<begdef><ERIC>
B1  ; S AU=<family>, <first1>. <second>?
  OR AU=<family>, <first1>.<second>?
  OR AU=<family>, <first1><first2> <second>?
  OR AU=<family>, <first1><first2><second>?;
  t /3/all <enter>
<enddef>
```

Prior to the online session, the macro "AUTHOR" is executed by a batch file containing the commands:

```
PKLOAD
PROKEY AUTHOR.KEY/R/[AUTHOR]
```

and the searcher is prompted for the author's name. The communications program is then loaded to connect to the host computer. When online, entering **ALT-, then ERIC** followed by **RETURN** will search the ERIC file for the author. **ALT-, BIOSIS** will search for the same author in BIOSIS, while **ALT-, SCISEARCH** will search SCISEARCH.

ProKey has a number of limitations. In the example above, the searcher is prompted for the author's name before the online session. ProKey cannot prompt you for information while you are online. Neither can it display a custom designed screen for you to enter the search terms once you are online. It is also apparent to the experienced searcher that searching for authors using AUTHOR.KEY is not as effective as first **EXPAND**ing and then **SELECT**ing the name. Given the name CLEVERDON, C. W., for instance, AUTHOR.KEY will not retrieve CLEVERDON, CYRIL W.

ProKey cannot be used to create a front end package comparable with the sophisticated packages that are available on the market. However, ProKey is good for creating a small package to support an online ready reference service. Macros can be created for routine ready reference searches in a few frequently used files.

CONCLUSION

General purpose macro processors have been found to be useful in many microcomputer applications. They prove to be just as useful in the context of an online search service. We have looked at some of the ways these macro processors can assist in online searching. With such a package the searcher need not be restricted by the limitations of the communications program he is using. He can enhance its capabilities to suit his needs and improve his service.

ACKNOWLEDGMENTS

Using a keyboard enhancer for storing search statements was the idea of Edward Loo of the Institute of Systems Science at the National University of Singapore.

I am grateful to Ms Sylvia Yap (Head of Science Library, National University of Singapore) for her suggestions and encouragement, and to C.S. Chong (Programmer Analyst attached to the National University of Singapore Library Automation Unit) for reading through the article.

REFERENCES

[1]. Altman, Rick. "Elegant enhancers." *PC World* 3(11) : 202-212 (Nov 1985).

[2] "Clash of the key enhancers : benchmarks : Personal computing's performance guide." *Personal Computing* 10(3) : 31 (March 1986).

[3] Foster, Edward. "Macros for the masses." *Personal Computing* 9(9) : 34-43 (Sept 1985).

THE
Online
Chronicle

Brings You Timely News Of The Online World...

Plus A Job-finding Service That Works!

from the Publisher of ONLINE and DATABASE magazines

To see the Table of Contents use this simple command: S TC;T1/5

Looking for a job...or an employee? *The listings are FREE* to both employer and job-seeker. Send your job ad to: The Online Chronicle, 11 Tannery La., Weston, CT 06883. Or call (203) 227-8466.

The Online Chronicle
File 170 on DIALOG

[4] Grant, Glenn. "Key definition programs : make everything fall in line with a keystroke or two." *Pro-files* 3(5) : 49-54 (Dec 1985).

[5] Gulden, Fred. "Keyboard utilities." *Library Software Review* 4(6) : 392-394 (Nov/Dec 1985).

[6] Reed, Sandra R. "A new look for SmartKey." *Personal Computing* 10(1) : 152 (Jan 1986).

[7] Reed, Sandra R. "Three paths to macro processing." *Personal Computing* 9(9) : 43-47 (Sept 1985).

[8] White, Ron. "Automate your software." *Popular Computing* 4(12) : 62-70 (Oct 1985).

[9] Wortman, Leon A. "Nobody loses the battle of the keys : four keyboard enhancers have similar functions, different prices." *InfoWorld* 7(31) : 43-46 (Aug 1985).

[10] Schiffmann, Genevieve N. "Hedges . . . the sometimes ignored search technique that can save a lot of time." *ONLINE* 9(6) : 40-41 (Nov 1985).

THE AUTHOR

CHRISTOPHER SOO-GUAN KHOO holds a B.A. from Harvard University and has been working in the National University of Singapore Library for the past three years. He divides his time between Reference and Information Services (Technology/Architecture Reference Section) and the Cataloging Department. He plans to enter library school in the spring or summer of 1987. He comments that he is alarmed that some of the top library schools have closed down or are closing down and wonders if he is entering the right profession.

Communications to the author should be addressed to Christopher Soo-Guan Khoo, Reference Department, Central Library, National University of Singapore, Kent Ridge, Singapore 0511.

GOOD IN-HOUSE DATABASE SOFTWARE
IS KNOWN BY THE COMPANY IT KEEPS
If you need a multi-user online system for in-house database management and information retrieval, there's an easy way to decide what's worth looking at.
FOLLOW THE LEADERS... You'll be in very good company with STAIR
Put us on your MUST VISIT list at Online '86—Booth #103
CUADRA ASSOCIATES, INC.
2001 Wilshire Blvd., Suite 305, Santa Monica, CA 90403
Telex: 756814 CUADRA SNM Telephone: (213) 829-9972

MAXIMIZING THE POWER OF AN ELECTRONIC SPREADSHEET

by David J. Peterson
Department Administrator
Medical College of Wisconsin

Most personal computer users are familiar with and have used an electronic spreadsheet. Those users who haven't, should be using spreadsheets if any "number crunching" is required in the way of statistics, budgets, and forecasts. An electronic spreadsheet can turn the drudgery of tedious calculations into a more stimulating exercise, and, at the same time, enhance the speed and accuracy of the results. Moreover, by allowing the electronic spreadsheet to do the actual number crunching, the user frees up more time to analyze the numbers instead of using that time to compute the numbers.

Experience shows, however, that users ranging from the frequent to the casual often forget that most electronic spreadsheets have a number of "built-in" mathematical formulas that remain unused and untouched. These formulas tend to be similar—if not exactly the same—as users move from one brand name spreadsheet application to another. Consequently, once the user learns one set of formulas, it is highly likely that these same commands for the formulas can be used from spreadsheet to spreadsheet, which lowers the learning curve when learning new spreadsheet software packages.

EARLY IN THE GAME

Unless a spreadsheet user acquires the "formula" habit early in the game, the formula's availability for specific applications tends to be quickly forgotten since the user can manually define his own formulas. For example: if one wants the average of the values appearing in five (5) row cells, the user can type $+(A_n+B_n+C_n+D_n+E_n)/5$ or the user can type the formula $@AVG(A_n..E_n)$. In this example of the use of a mathematical formula, the user has already saved seven (7) keystrokes (19 versus 12 respectively). If the user has a fairly large, sophisticated spreadsheet application packed with formulas, seven keystrokes per unique formula can quickly add up to scores, if not hundreds, of additional and unnecessary keystrokes. Most PC users develop in a very short time an insatiable thirst for speed; using the built-in formulas can minimize the keystrokes thereby speeding the input.

Naturally, there exists a "breakeven" point, so to speak, when applying the built-in formulas vis-a-vis the manually defined formulas. For extremely short formulas such as adding the values in two or three cells, a user may save keystrokes by manually building the formula $+A_n+B_n+C_n$ instead of $@SUM(A_n..C_n)$.

POWERFUL FORMULAS

As a general rule there appears to be four general categories of formulas available: algebraic, scientific, statistical, and financial. Within these categories exists a myriad of formulas designed for specific applications. For example: determining the minimums and maximums of a range of cells is possible, averaging and determining percentages is also a possibility, along with the determination of sines, cosines and tangents. Want to generate a random number? Find a square root? Figure the standard deviation of a series of values? It's highly likely that any particular spreadsheet application has the capability to give the user those answers and more.

Illustrating just how powerful these formulas can be, the example in Table 1 uses one of the financial formulas available to find the future value of an annuity which, in this example, will be a series of equal, $100 monthly deposits over a period of one year. Moreover, to allow for speculation and forecasting, the future value of this annuity will be determined at four different interest rates. For this spreadsheet package, the generic spreadsheet formula available to find the values is **@FV(payment, interest rate, period)** where the payment is $100, the

interest rate is the annual rate divided by twelve (the annuity is compounded monthly) and the period runs from one to twelve. Consequently the formula appearing in the cell referenced in Column C, Row 9 in Table 1 is @FV(100,.00833,7) or @FV(B9,.00833,A9).

In years past, such information as contained in Table 1 was available, for the most part, only through bankers, brokers, accountants, financial planners, and the like. By incorporating powerful, built-in formulas into the spreadsheets, the spreadsheet designers have given the average PC user the tools available to become, in this instance, a financial planner.

USER IMPACT

Aside from the obvious general advantages of an electronic spreadsheet, the benefits of the built-in formulas are tremendous and can be summarized as follows:

Speeding Input of Data: The brief examples shown above have clearly demonstrated that in many instances, the use of the built-in formula will minimize keystrokes as compared to manually building the formula.

Increased Availability of Information/Data: Once the basic spreadsheet data has been input, the built-in formulas allow for the manipulation of that data into meaningful management information. Most often it is not the raw data or gross values that are helpful, but the subtle relationships that exist between the data. By using the built-in formulas, these relationships can be quickly and easily determined.

Raw Calculating Power: Admittedly most of the electronic spreadsheet's built-in formulas are neither new nor unique; for years the analyst/information compiler has survived without them. The built-in formulas do, however, give the user the added advantage of having the capability to perform hundreds of mathematical iterations in a matter of seconds, calculations that heretofore required considerably more time.

In short, spreadsheet users should maximize their use of the electronic spreadsheet by not forgetting or ignoring the built-in formulas. They are worth the few extra minutes required to learn them.

TABLE 1

Future Value of an Annuity

Row/ Column	A	B	C	D	E	F
1	period	deposit	10%	15%	20%	25%
2						
3	1	$100.00	$ 100.00	$ 100.00	$ 100.00	$ 100.00
4	2	100.00	200.83	201.25	201.67	202.08
5	3	100.00	302.51	303.77	305.03	306.29
6	4	100.00	405.03	407.56	410.11	412.67
7	5	100.00	508.40	512.66	516.95	521.27
8	6	100.00	612.64	619.07	625.56	632.13
9	7	100.00	717.75	726.80	735.99	745.30
10	8	100.00	823.73	835.89	848.26	860.83
11	9	100.00	930.59	946.34	962.39	978.76
12	10	100.00	1038.35	1058.17	1078.43	1099.15
13	11	100.00	1147.00	1171.39	1196.41	1222.05
14	12	100.00	1256.56	1286.04	1316.35	1347.51

THE AUTHOR

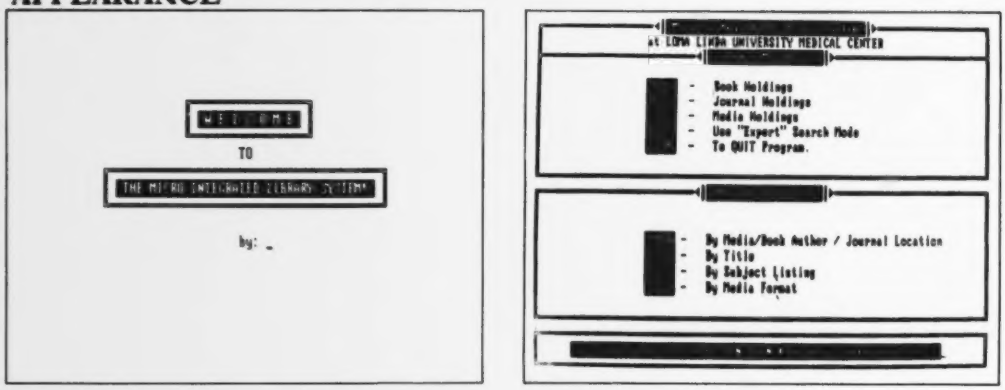
DAVID J. PETERSON, an Administrator for the Medical College of Wisconsin, is currently the Business Manager for the Libraries. Prior to his employment at MCW, he was the Project Leader for the installation of a corporate-wide, MIS database for a Fortune 100 company. He holds a Master of Business Administration degree from the University of South Dakota.

Communications to the author should be addressed to David J. Peterson, Department Administrator, Medical College of Wisconsin Libraries, 8701 Watertown Plank Road, Milwaukee, WI 53226.

SOURCE CODE

by Paul W. Kittle
Director of Medical Libraries
Adventist Health Systems Loma Linda

PROGRAMMING FOR APPEARANCE



Creating windows dresses up an ordinarily drab program.

Writing programs is a task not readily tackled by many information specialists because of the time involved in learning the software language. Once a language has been learned to the extent of limited writing capability, function will usually far outweigh appearance. This is evident in many of the "off-the-shelf" programs that have been written by full-time "professional" programmers. This does not need to be the case, however, and I am a firm believer in programming for appearance as well as function.

I think all users have experienced the dull drab program that scrolls up on our CRT's and prompt our interaction with simple text. This is a hold over from the old mainframe, CP/M, and other 8 bit systems that had limited, if any, graphic capabilities. With the introduction of the 16 bit MSDOS, an upper ASCII code has now become available that should run on most IBM or IBM compatibles, with or without color boards.

An example of attractive programming coupled with function is PRO-SEARCH from Menlo Corp. When I first saw their original product IN-SEARCH, I must confess to being more impressed with the way they handled the screen than with the actual functioning of the program itself. Windows within windows and sliding cards impress me. This was the work of true professionals, and at once I began to wonder if such fine touches could be added to other programs. I discovered they can.

There are several ways of windowing with programming. One method of handling the window-effect is by storing all frequently used memory variables to similar prefixes. In dBASE or RBASE, memory variables can be assigned specific values including graphic codes. I use **G**. . for global variables that will be used throughout various subroutines, **L**. . for

Note: we have occasionally broken program lines to fit column width. Any line that begins with —— is a continuation of the preceding line; when entering the code into your computer, continue to type the marked line (leaving out the ——) on the same line as the line above it. If a space is critical where the line breaks, the continuation begins ——(sp). Continue to type the marked line, leaving out the ——(sp), but insert the space.

local variables that exist only within particular subroutines (these can then be cancelled out by the use of the **RELEASE ALL LIKE L*** command in dBASE II, and III), and **S**.. for those that may be used in one or two related subroutines, but are not saved for global use. An example of assigning the upper IBM ASCII codes (using the double lines) in dBASE II and III is as follows:

```
* GRAPHIK.PRG   A PROGRAM WRITTEN IN DBASE II FOR ASSIGNING
* GRAPHIC CHARACTERS TO MEMORY VARIABLES FOR PRODUCING
* WINDOWS IN DBASE PROGRAMS. WRITTEN BY P.W.KITTLE
* COPYRIGHT P.W.KITTLE 1985
STORE CHR(204) TO G5
STORE CHR(185) TO G9
* G20 WILL HOLD A LINE 7 CHARACTERS LONG:
STORE  CHR(205)+CHR(205)+CHR(205)+CHR(205)+CHR(205)+
---CHR(205)+CHR(205) TO G20
* G21 WILL HOLD A LINE 2 CHARACTERS LONG:
STORE CHR(205)+CHR(205) TO G21
* G30 WILL HOLD A LINE 16 CHARACTERS LONG:
STORE G20+G20+G21 TO G30
STORE CHR(201) TO G22
STORE CHR(187) TO G23
STORE CHR(188) TO G24
STORE CHR(200) TO G25
STORE CHR(188) TO G26
STORE CHR(203) TO GM1
STORE CHR(202) TO GM2
* END STORING OF UPPER ASCII CHARACTERS TO MEMORY
  VARIABLES
```

Now that the upper ASCII characters have been stored to memory variables, they can be called when needed within the program to design borders and windows where desired. By using the variables **G20**, **G21**, and **G30**, most configurations of borders should be possible.

An example of three windows that can be used in the code follows:

```
* BORDERT.PRG WRITTEN BY P.W.KITTLE COPYRIGHT P.W.KITTLE,
  1985
* THIS PROGRAM DRAWS A BORDER AROUND TOP THIRD OF 80X25
  SCREEN.
@1,0 SAY G22+G20+G21+G30+G30+G30+G30+G23
@2,0 SAY G24
@2,74 SAY G24
* THE FOLLOWING CHARACTERS ALLOW FOR AN INSIDE SPLIT OF THE
* UPPER WINDOW – CHANGE THEM TO "G24" IF THIS SPLIT IS NOT
* DESIRED
@3,0 SAY CHR(204)
@3,74 SAY CHR(185)
@4,0 SAY G24
@4,74 SAY G24
@5,0 SAY G24
@5,74 SAY G24
@6,0 SAY G24
@6,74 SAY G24
@7,0 SAY G24
@7,74 SAY G24
@8,0 SAY G24
@8,74 SAY G24
@9,0 SAY G24
@9,74 SAY G24
@10,0 SAY G24
@10,74 SAY G24
@11,0 SAY G25+G21+G20+G30+G30+G30+G30+G26
* RETURN IS USED HERE TO RETURN CONTROL TO THE CALLING
* PROGRAM
RETURN
```

That draws a nice window in the upper third ►

Announcing:

Pro-Cite™ – the database system designed especially for information professionals.

Personal Bibliographic Software, Inc.

P.O. Box 4250, Ann Arbor, Michigan 48106 (313) 996-1580

Whether you're a professor, librarian or researcher, you know what it's like to struggle with the "general-purpose" database system. **You have special needs** - so why settle for a "generic" database system? With Pro-Cite, you never have to worry about defining the length of a field, or deciding which fields you might want to include. **Pro-Cite™ was designed with your needs in mind.**

- Variable length fields for the most complex bibliographic references
- Twenty-two document types for data entry, including two user-defined workforms
- Full-text Boolean searching–unlimited key word searching
- Sorting on all fields
- Customized bibliographic formats through a menu-driven user interface

More than just another database system—you'll be "raven" about it!

Pro-Cite is The Professional Bibliographic System, version 3. Available for the IBM-PC line and compatibles. Call or write for more information.

of the screen. To continue to the next area, add the following code:

```
* BORDERB.PRG WRITTEN BY P.W.KITTLE, COPYRIGHT P.W.KITTLE,
* 1985
* THIS DRAWS BORDER CENTER QUASI BOTTOM THIRD OF SCREEN -
* APPROX. SIZE SAME AS BORDERT.PRG
@12,0 SAY G22+G20+G21+G30+G30+G30+G30+G23
@13,0 SAY G24
@13,74 SAY G24
@14,0 SAY G24
@14,74 SAY G24
@15,0 SAY G24
@15,74 SAY G24
@16,0 SAY G24
@16,74 SAY G24
@17,0 SAY G24
@17,74 SAY G24
@18,0 SAY G24
@18,74 SAY G24
@19,0 SAY G24
@19,74 SAY G24
@20,0 SAY G25+G21+G20+G30+G30+G30+G30+G26
* AGAIN USE OF THE RETURN TO RETURN CONTROL TO CALLING
* PROGRAM.
RETURN
```

These two programs will draw windows over the major portion of the screen. To add a third window for single line messages, instructions or input, use the following code:

```
* BORDER3.PRG WRITTEN BY P.W.KITTLE COPYRIGHT P.W.KITTLE,
* 1985
* THIS DRAWS A SMALL WINDOW AT THE BOTTOM OF THE SCREEN.
@21,0 SAY G22+G20+G21+G30+G30+G30+G30+G23
@22,0 SAY G24
@22,74 SAY G24
@23,0 SAY G25+G21+G20+G30+G30+G30+G30+G26
* USE OF THE RETURN HERE TO RETURN CONTROL TO MAIN
* PROGRAM.
RETURN
```

If all that coding seems to be a bit much, there is a word processing package on the market that will allow the programmer to actually input the upper ASCII itself into the code without having to define each character. That program is called the "Professional Writer's Package" from Emerging Technologies in Colorado. Their text editor EDIX, which is a part of the package, will actually type on the screen the upper ASCII code in a dBASE program, and the program will display the graphics so input. A word of warning going this route, however: if the program is edited using the dBASE editor, the extended code will be converted to lower ASCII characters, and the nice graphics will turn into garbage.

```
* BORDER1.PRG WRITTEN BY P.W.KITTLE, COPYRIGHT 1985
* P.W.KITTLE
* THIS ROUTINE DRAWS A BORDER AROUND ENTIRE SCREEN.
@1,0 SAY G22+G20+G21+G30+G30+G30+G30+G23
@2,0 SAY G24
@2,74 SAY G24
@3,0 SAY G24
@3,74 SAY G24
@4,0 SAY G24
@4,74 SAY G24
* IF SPLIT IN SCREEN NOT DESIRED HERE, REPLACE WITH "G24" ON
* NEXT TWO LINES
```


HOW YOU CAN BENEFIT FROM THE ONLINE COMMAND CHART

Who can benefit from the Online International Command Chart? Searchers who are learning a new system and want to compare its commands with those of the system they're most familiar with . . . Searchers who use many retrieval systems, but most of them on an infrequent basis; the Chart allows them to start with their most-used system and find the comparable commands in all the others . . . Online professionals who are teaching other people to use databases.

The new Command Chart is in a format useful to searchers – with larger type, heavy, durable paper in a flip chart format so it can be kept next to the terminal.

Following are the systems included:

AMERICAN – DIALOG, BRS, ORBIT, NLM, VU/TEXT, NEXIS, RLIN

CANADIAN – CAN/OLE, Info Globe, QL Systems

EUROPEAN – ESA-IRS QUEST, ESA-IRS Common Command Language, INKA (also used for DIMDI, Echo, Fiz Technik and GID), DATA-STAR, Pergamon InfoLine, Questel Plus

There are forty-one different online commands listed, including both major and minor commands, ranging from Logon to Logoff.

Some typical commands that are compared are FILE SELECTION, SEARCH COMMAND, SUBJECT TERM ENTRY, TEXT WORD ENTRY, COMBINING TERMS, TRUNCATION, RESTRICTING SEARCH RESULTS, ONLINE PRINTING, and DOCUMENT DELIVERY . . . plus 32 more!

The Online International Command Chart is available now and costs $40.00. Additional charts are $25.00 each when included in the same order to the same mailing address as the first ordered at the regular price. Simply fill out the form below to order and mail to: Online, Inc., Dept CC, 11 Tannery Lane, Weston, CT 06883, telephone (203) 227-8466.

Name & Title .....

Organization .....

Address .....

City/ST/Zip ..... Country .....

Phone .....

Please send me _____ copies of the Online International Command Chart. Shipping charges will be added to foreign orders.

☐ Please invoice Charge to: VISA ☐ Mastercard ☐ AMEX ☐ Acct. # .....

Exp/date ..... ☐ Check enclosed

```
@5,0 SAY CHR(204)
@5,74 SAY CHR(185)
@6,0 SAY G24
@6,74 SAY G24
@7,0 SAY G24
@7,74 SAY G24
@8,0 SAY G24
@8,74 SAY G24
@9,0 SAY G24
@9,74 SAY G24
@10,0 SAY G24
@10,74 SAY G24
@11,0 SAY G24
@11,74 SAY G24
@12,0 SAY G24
@12,74 SAY G24
@13,0 SAY G24
@13,74 SAY G24
@14,0 SAY G24
@14,74 SAY G24
@15,0 SAY G24
@15,74 SAY G24
@16,0 SAY G24
@16,74 SAY G24
@17,0 SAY G24
@17,74 SAY G24
@18,0 SAY G24
@18,74 SAY G24
@19,0 SAY G24
@19,74 SAY G24
@20,0 SAY G24
@20,74 SAY G24
* IF SPLIT NOT DESIRED AT BOTTOM, REPLACE NEXT TWO LINES WITH
* G24
@21,0 SAY G5
@21,74 SAY G9
@22,0 SAY G24
@22,74 SAY G24
@23,0 SAY G25+G21+G20+G30+G30+G30+G30+G26
RETURN
```

If the border around the entire screen is to be solid sometimes, and broken by upper and lower splits other times, the following small routine can be used to convert the split border (BORDER1.PRG) into an unbroken border around the entire screen:

```
* BORDER2.PRG COPYRIGHT 1985 P.W.KITTLE
* WIPES OUT THE SPLIT LINES INDENTS IN BORDER1.PRG
@5,0 SAY G24
@5,74 SAY G24
@21,0 SAY G24
@21,74 SAY G24
RETURN
```

Your program now has borders which can also be split to form internal windows. To add a little more flash to the program, a floating greeting can be added like so:

```
* GREETING ROUTINE WRITTEN BY P.W.KITTLE, COPYRIGHT
* P.W.KITTLE 1985
* BE CERTAIN TO HAVE ADDED THE GRAPHIK.PRG PROGRAM FIRST!
* FOR REVERSE VIDEO ON MONO SYSTEMS:
SET COLOR TO 112,007
* FOR COLOR CYAN/BLUE USE THE FOLLOWING:
* SET COLOR TO 113,003
* FOR COLOR AMBER/BURGANDY USE THE FOLLOWING:
* SET COLOR TO 110,006
* REVERSE THESE AS APPLICABLE IN AREAS "SET COLOR TO..."
STOR 0 TO LT
STOR 0 TO LY
STOR 'W E L C O M E' TO LZ
ERAS
```

►

Don't be left out in the cold!

You'll get a warm welcome at

AUSTRALIA'S INFORMATION '87

SYDNEY January 19-23

Australian Convention & Management Services

P.O. Box 468 PADDINGTON NSW 2021 AUSTRALIA

Telex: AA176765 Telephone: 61-2-357 4022

```
DO WHIL LT<10
ERAS
@LT,LY GET LZ
STOR LT+1 TO LT
STOR LY+3 TO LY
ENDD
@9,27 GET LZ
@8,25 SAY G22+G21+G21+G21+G21+G21+G20+G23
@9,25 SAY G24
@9,43 SAY G24
@10,25.SAY G25+G21+G21+G21+G21+G21+G20+G26
@9,27 GET LZ
@11,32 SAY ' TO '
DO WHIL LT<30
STOR LT+1 TO LT
ENDD
@12,13 SAY G22+G21+G21+G21+G21+G21+G20+G20+G20+
---G21+G20+G23
@13,13 SAY G24
@13,54 SAY G24
@14,13 SAY G25+G21+G21+G21+G21+G21+G20+G20+G20+
---G21+G20+G26
SET COLOR TO 007,112
@13,15 SAY '<WHATEVER YOU WOULD LIKE THREE LETTERS LONG,
---(sp)I.E."THE">'
DO WHIL LT<40
STOR LT+1 TO LT
ENDD
@13,20 SAY '<WHATEVER YOU WOULD LIKE SIX LETTERS LONG>'
DO WHIL LT<50
STOR LT+1 TO LT
ENDD
@13,26 SAY '<WHATEVER YOU WOULD LIKE 10 LETTERS LONG>'
DO WHIL LT<60
STOR LT+1 TO LT
ENDD
@13,37 SAY '<WHATEVER YOU WOULD LIKE 7 LETTERS LONG>'
DO WHIL LT<70
STOR LT+1 TO LT
ENDD
@13,45 SAY '<WHATEVER YOU WOULD LIKE 7 LETTERS LONG>'
DO WHIL LT<90
STOR LT+1 TO LT
ENDD
SET COLOR TO 112,007
```

Where I have typed **WHATEVER YOU WOULD LIKE X LETTERS LONG** in the above code, the words the length indicated will appear to pop out of the screen within the center border, moving from left to right.

To put all of that together, along with a routine that will only display the opening dance of your message once a day, create a .DBF file. I call mine "DATER.DBF" and its structure is as follows:

Field	Name	Type	Width
001	DATE1	C	008
002	DSK1	C	001
003	DSK2	C	001
004	COLOR1	C	003
005	COLOR2	C	003

This .DBF file gives the programmer a place to place a date, disk drive assignments (to be dealt with in another article) and screen color assignments. Within the code above, the programmer could change it to:

```
USE DATER
STOR DSK1 TO GD1
STOR DSK2 TO GD2
STOR COLOR1 TO L88
STOR COLOR2 TO L77
* REPLACE ALL "112,007" WITH FOLLOWING LINE:
* SET COLOR TO &L88,&L77
* THE NEXT LINE CHECKS DBASE II'S INTERNAL DATE FINDER AND
* COMPARES IT TO THE LAST DATE PLACED INTO THE DATER.DBF FILE.
STOR DATE() TO LDATE2
IF LDATE2#DATE1
* PLACE ROUTINE WITH GREETING AND POPPING WORDS HERE
* THE NEXT LINE PREVENTS THE ROUTINE FROM APPEARING AGAIN
* THE SAME CALENDAR DATE
REPL DATE1 WITH DATE ()
ENDI
```

The only thing left is to place it together in a program. The following code utilizes the windows in an online card catalog selection:

```
* MICROCAT.PRG WRITTEN BY P.W.KITTLE COPYRIGHT 1985
* P.W. KITTLE
* THIS ROUTINE DISPLAYS A MENU OF SELECTIONS WITHIN THE
* WINDOWS DESCRIBED ABOVE.
USE
DO WHIL GANS#'Y'
ERAS
USE
* SETS FUNCTION KEYS TO INPUT SELECTIONS
SET F1 TO 'B;'
SET F2 TO 'J;'
SET F3 TO 'A;'
SET F4 TO 'L;'
SET F5 TO 'T;'
SET F6 TO 'S;'
SET F7 TO 'E;'
SET F8 TO 'F;'
SET F10 TO 'Q;'
STOR 'B' TO L
DO WHIL L='B'
* SETS THE FUNCTION KEY SELECTION INTO INVERSE VIDEO FOR
* NICER LOOK
STOR ' F1 ' TO LF1
STOR ' F2 ' TO LF2
STOR ' F3 ' TO LF3
STOR ' F4 ' TO LF4
STOR ' F5 ' TO LF5
STOR ' F6 ' TO LF6
STOR ' F7 ' TO LF7
STOR ' F8 ' TO LF8
STOR ' F10 ' TO LF10
STOR ' Micro-Catalog Library Program ' TO LX
DO BORDERT
@1,19SAY CHR(273)+CHR(179)
@1,21GET LX
@1,54SAY CHR(179)+CHR(272)
@2,18SAY'at ' + G12
@3,18AY CHR(205)+G21+G21+G21+G30+G30+G30+G30+G21
@5,18GET LF1
@6,18GET LF2
@7,18GET LF3
@8,18GET LF7
@9,18GET LF10
STOR ' SEARCH MATERIAL ' TO LIPS1
@3,26SAY CHR(273)+CHR(179)
@3,28GET LIPS1
@3,47SAY CHR(179)+CHR(272)
@5,23SAY' – Book Holdings '
@6,23SAY' – Journal Holdings '
@7,23SAY' – Media Holdings '
@8,23SAY' – Use "Expert" Search Mode'
@9,23SAY' – To QUIT Program.'
STOR ' – – > Please press the Function Key of your choice < – – '
---(sp)TO LS
DO BORDER3
```

```
@22,6 GET LS
SET CONS OFF
ACCE TO LANS
SET CONS ON
STOR LANS TO LOHO
STOR 0 TO LXRT
DO CASE
CASE LANS='A'
STOR ' MEDIA ' TO LTYPE
STOR 'X' TO L
CASE LANS='B'
STOR ' BOOKS ' TO LTYPE
STOR 'X' TO L
CASE LANS='J'
STOR ' JOURNALS ' TO LTYPE
STOR 'X' TO L
CASE LANS='E'
* "EXPRT" WOULD BE THE NAME OF YOUR EXPERT MODE .PRG (CP/M
* *.CMD") FILE
DO EXPRT
CASE LANS='Q'
QUIT
OTHE
@22,6 SAY CHR(07)
@22,14 SAY ' PLEASE PRESS ONE OF THE ABOVE KEYS !!
ENDC
ENDD
IF LXRT=0
STOR ' ACCESS ' TO LIPS2
DO BORDERB
@12,26SAY CHR(273)+CHR(179)
@12,28 GET LTYPE
@12,37 GET LIPS2
@12,47 SAY CHR(179)+CHR(272)
@15,18GET LF4
DO CASE
CASE LANS="J"
@15,23 SAY' – By Physical Location'
CASE LANS='A'
@15,23 SAY' – By Media Author'
CASE LANS='B'
@15,23 SAY' – by Book Author'
ENDC
@16,18GET LF5
@16,23 SAY' – By Title '
@17,18GET LF6
@17,23 SAY' – By Subject Listing'
IF LOHO='A'
@18,18 GET LF8
@18,23 SAY ' – By Media Format'
ENDI
STOR '– – > Please press the FUNCTION KEY of your choice < – –'
---(sp)TO LS
DO BORDER3
@22,6 GET LS
SET CONS OFF
ACCE TO LANS
STOR !(LANS) TO LANS
SET CONS ON
DO CASE
CASE LANS='L'.AND.LOHO='B'
STOR 0 TO SOP
* "BUCH" WOULD BE THE .PRG FILE FOR FINDING YOUR BOOKS.
DO BUCH
CASE LANS='L'.AND.LOHO='J'
* "LOCJRL" WOULD BE THE .PRG FILE FOR FINDING JOURNALS BY
* LOCATION
DO LOCJRL
CASE LANS='L'.AND.LOHO='A'
STOR 0 TO SOP
* "AV" WOULD BE THE .PRG FILE FOR FINDING MEDIA MATERIALS
DO AV
CASE LANS='T'.AND.LOHO='B'
STOR 1 TO SOP
* AGAIN, THE BOOK FILE IS "BUCH.PRG" YOU WOULD RENAME THIS
* TO YOUR OWN PROGRAM FOR FINDING BOOKS
DO BUCH
CASE LANS='T'.AND.LOHO='J'
STOR 0 TO SOP
* "JRLTITL" WOULD BE THE .PRG FILE FOR FINDING JOURNAL TITLES
* IN THE .DBF
DO JRLTITL
CASE LANS='T'.AND.LOHO='A'
STOR 1 TO SOP
* AGAIN, THE MEDIA PROGRAM IS CALLED TO LOOK FOR MEDIA
DO AV
CASE LANS='S'.AND.LOHO='B'
STOR 2 TO SOP
DO BUCH
CASE LANS='S'.AND.LOHO='J'
STOR 1 TO SOP
DO JRLTITL
CASE LANS='S'.AND.LOHO='A'
STOR 2 TO SOP
DO AV
CASE LANS='F'.AND.LOHO='A'
STOR 3 TO SOP
DO AV
CASE LANS='Q'
QUIT
CASE LANS='E'
DO EXPRT
OTHE
@22,14SAY '     That was an INVALID command . . . .
STOR 0 TO LT
DO WHIL LT<20
STOR 1+LT TO LT
LOOP
ENDD
ENDC
ENDI
ENDD
```

Use of these programming hints can enhance your code to make it look, as one of the doctors said to me "like it was done by someone who knew what they were doing. . ."

Note: This column was written in dBASE II. Certain changes will have to be made in the code for dBASE III or dBASE III+ in order for it to work properly.

If you are using dBASE III+, you must either change your "config.db" file to read "status = off," or bring all **@ 22, X Say** *statements above line 21. All other lines should be adjusted accordingly. I think it might be easier to set your "status = off." Either will work. PWK*

Communications to the author should be addressed to Paul W. Kittle, Director of Medical Libraries, Adventist Health Systems Loma Linda, P.O. Box 2000, Loma Linda, CA 92354. (For $5.00 the author will send you a copy of this source code on diskette, including the diskette.)

Editor's note: Neither Online, Inc. nor the author are responsible for loss of data as a result of using any published program. It is the responsibility of the end-user to verify the appropriateness of this and other "freeware" programs.

Do It For Less! A Comparison of Low-Cost Communications Software For The IBM PC

by Stephen Clancy, M.L.S.
Associate Librarian
Biomedical Library
University of California, Irvine

INTRODUCTION

Over the past few years, a flood of software packages designed for online communications have become available, with a wide spectrum of features . . . and prices. Attendant to this cornucopia, is a predictable confusion among users as to the "best" software for specific applications. For online searching, involving large volume text transfer, certain specific features are desirable.

A few relatively expensive ($100+), and often well-put-together commercial packages such as CROSSTALK XVI® and Hayes SMARTCOM II™, extensively reviewed elsewhere, have become well-known throughout the user community. Many excellent communications programs can be found at the lower end of the price scale, however. For $50 or less, one may acquire software which will satisfy all of the usual requirements of online searching, and contain many of the "extras" often found in more expensive products.

This review will cover four such products which operate on the IBM® Personal Computer or close compatible. One of the four is available commercially, while the others are distributed as "user-supported" software, or "shareware," which is a more non-traditional method of software distribution.

Each package was tested on an IBM PC XT with 256K RAM memory; two half-height, double-sided floppy disk drives; one 10MB fixed disk; a standard IBM monochrome monitor; and a Hayes 1200B Smartmodem™ (3 dip switch model). In addition, each package was tested with a Sony Trinitron® CPD-1201/9000 Super Fine Pitch color/graphics monitor utilizing a Hercules™ Color Card, and a standard-issue IBM PC/M300 Workstation with external Hayes 1200 Smartmodem™.

DESIRABLE FEATURES

Each product was reviewed and tested with the specific needs of the online searcher in mind: that is, to communicate interactively with such services as DIALOG, BRS, CompuServe, Dow Jones, or MEDLARS; and, to capture large amounts of text to a printer or disk file. At this point, the transfer of binary and other non-ASCII files using such protocols as XMODEM is not an integral part of online searching *per se*, so was not emphasized. A summary of the protocols available for each package is listed in Figure 5.

Specific features, which should be an integral part of any software used for online searching, have been summarized below:

1) Dialing Directory

A directory of stored telephone numbers is a highly useful, highly desirable feature. A clearly structured directory should display a list of host system names (e.g. DIALOG), and if possible, telephone numbers which eliminates the need to remember, or keep a separate list of those frequently dialed. Additional information might include standard communication settings such as speed (baud rate), duplex, parity, etc. The directory should not be overly cluttered.

The directory should either be displayed upon entry into the program, or be easily (and obviously) accessible from any point in the program with one or two keystrokes.

2) Autodial/Redial Capability

Along with the use of a dialing directory, is the virtually mandated autodial feature . . . the ability of the software to automatically dial a phone number or list of numbers using the modem. While most software will also support manual dialing (from the keyboard) for use with modems that do not support autodial, this is not the preferred method.

A redialing feature should go hand-in-hand with autodialing to allow for continuous redialing of busy numbers.

3) Capture of Search Results

Traditionally, capture of search results on-

line has been accomplished by printing them on a printer as the search progressed. Now, with the advent of communications at higher baud rates (1200+), it is becoming more desirable to capture the search session to a disk file while online (which usually involves the periodic transfer or "dumping" of data to the file from a program-defined memory buffer), rather than a printer which may not be able to keep up with the increased speed of data flow without a loss of characters.

Useful communications software should allow both methods. A third, which involves capturing first to the RAM memory, then sending the data to a disk file after logging off, is limited by the amount of available memory and is rather risky at best, so will not be considered here.

4) Communications Parameters—Ease of Selection and Change

Accessing several different online systems often requires the modification of communication settings such as baud rate, parity, duplex, etc. A good communications package allows the user to easily access and modify these various parameters. A better package explains each setting as well.

5) Ability to Send Macros from Keyboard

In many cases it is useful to send predefined strings of text to the host computer (e.g. login sequences, oft used command strings, stacked commands, etc.). This can be more than just a convenience when the user deals with several online systems, differing logon sequences, and commands. The ability to send frequently typed text, or "macros" to the host at the touch of a key is highly desirable.

6) Ability to Filter Incoming Control or Escape Sequences

Many host systems send a variety of control characters along with the normal text to control its flow and/or appearance. These characters (which usually fall between ASCII 000–031) often appear as non-text characters on the user's screen and can be extremely bothersome. In addition, noise or static on the communications line can sometimes mimic these control characters or escape sequences (often used to control printers) leading to unpredictable results. Anyone who has had their printer suddenly switch from normal to italicized printing in the middle of a search has experienced this phenomena!

Good communications software should allow the user some means of filtering out some, or all, of these characters, but unless the manual is fairly detailed, it often requires communications savvy to know which to eliminate.

MASTERCOM

Publisher/ Author:	The Software Store, Ltd. 706 Chippewa Square Marquette, MI 49855 (906) 288-7622
Availability:	Retail
Price:	$49.00
Compatibility:	• IBM PC and compatibles • 128K RAM memory minimum • PCDOS 1.x–3.x • CP/M-80 computer compatibles • 64K • CP/M-80 2.x or 3.x • Apple II (under development) • Supports Hayes modem standard command set.

MasterCom is an inexpensive communications utility available commercially through various retail outlets. Heavily menu-oriented, virtually all features are available as options from a series of menus or sub-menus (Figure 1). The user moves from menu to menu by choosing the appropriate menu, or by use of the Command key (defaulted to the ESC key) which will both cancel the current operation and/or move the user to the main menu. One may also invoke a function by stacking options, thereby bypassing the menus.

MasterCom supports all of the basic functions discussed above, including autodial/redial (using the Hayes standard modem command set), communications from 300–9600 baud, storage of 10 keyboard macros (accessed by pressing the Ctrl-A key sequence), filtering of 10 control (or other) characters.

Session capture with the MasterCom software may be most easily accomplished by choosing the "P" (printer) option, or by using the "M" (collect modem input in Memory Buffer) option from the Terminal Options Sub-menu (Figure 1).

By manipulation of various parameters and settings within the Transmission Parameters sub-menu, communications with a wide variety of host systems are possible. The trick, of course, is to know which parameters to alter. The manual explains each setting in some detail, and in addition, offers sample sessions in which many of the features are put to use.

MasterCom does not make use of a dialing directory, *per se*, but rather uses "parameter" files containing all settings for a particular ►

telephone number. These parameter files are not displayable as a list through any menu option (except by a display of the actual disk directory), but may be loaded from within MasterCom, or when the program is first executed. Telephone numbers can be entered or changed from the Phone Number Options Sub-Menu (Figure 1).

The MasterCom diskette is not copy protected, which allows a working copy (or backup copy if one prefers to use the original diskette) to be made, or installation for hard disk use. Additional copies of the current version are $15 for registered users. In addition, MasterCom comes with a money back guarantee. Support for registered owners is available via a telephone hotline, where I found the personnel to be helpful and straightforward regarding their product.

MasterCom left me feeling rather disappointed in comparison to the other three communications programs reviewed.

The lack of a dialing directory is rather puzzling. In my experience, even the most primitive software which supports autodialing offers a directory in some form. Without it, the user is reduced to either keeping a separate list, or viewing the disk directory each time to remember which files are available. At very least, the "F" (get parameter file) option should display a list of the parameter files (Figure 1).

The creation of a new parameter file (or in many cases, just the addition of a new phone number), becomes an adventure. The new number must be entered at the Phone Number Options menu ("E"—enter a new number to dial), at which point the program immediately begins dialing. To save the new number (assuming, of course that one is not actually going to dial into the host at this time), the user must then abort the dialing sequence, hang up the phone, then move to the Parameter menu to save the current number and settings.

I found myself growing very tired at having to bounce from menu to menu in this manner. As mentioned earlier, in some cases, it is possible to avoid many of the menus by combining the options (e.g. "NH" to hangup the phone). However, except for all but the most commonly used functions, this virtually requires use of a cheat-sheet.

Though many communication packages use menus to a greater or lesser extent, I felt that MasterCom's arrangement was not always clear. For example, the options for sending and capturing text are located under the Terminal Options Sub-Menu, rather than under the more logical "Send a File" or "Receive a File" options.

The most recurrent problem was the inability of MasterCom to reliably disconnect the phone line. I often found that after apparently hanging up the phone through use of the "H" option, I would still be connected to the host system. User Support at the Software Store hotline confirmed that this is a recognized bug in the program, and that they currently have no solution. The problem evidently is a sporadic one, but unfortunately, is not expected to be solved by the next expected release.

Occasionally, while printing search results directly during an online session, I encountered a sporadic loss of characters at the rate of perhaps 2-3 per page. This occurred at 1200 baud using an Epson FX-80 printer. Loss of text such as this was not something unique to MasterCom, but occasionally occurred with both Pc-Talk and ProComm when printing large volumes of text online. I did not run into this problem with Qmodem at any point, however. Loss of text may be partially attributable to printer speed (or lack of it) coupled with the higher rates of text transfer (1200 baud+). According to personnel at the Software Store, the next update of MasterCom (available for $5.00 to the registered users) will make use of an additional memory buffer for the serial port which may alleviate this problem.

The MasterCom User Manual is a paperbound affair of 95 pages. In addition to its detailed table of contents, the manual includes the only index of the four reviewed.

The manual includes many examples using various features and functions during actual online sessions. Many sections end with a discussion of possible problems the user may encounter, and with possible solutions.

I felt that some sections of the manual were too technical for the novice. The "Getting Started" section includes a discussion of "display logic" and communications cabling which should have been relegated to an appendix.

A version of MasterCom is also available for CP/M-80 compatible microcomputers, and the manual intermixes discussions of both PCDOS and CP/M-80 requirements and functions. This could easily lead to confusion; totally separate sections, or even separate manuals would have been wiser.

PC-TALK III VERSION 2.0

Publisher/ Author:	Headlands Communications Corp. P.O. Box 865 Tiburon, CA 94920 (415) 435-0770
Availability:	Publisher
Price:	$35.00
Compatibility:	• IBM PC and Compatibles. • 128K RAM memory minimum for compiled version.

- 64K version supplied with disk.
- Supports Hayes modem standard command set.

Pc-Talk III has come to be known as the premier user-supported communciations software program for the IBM PC. Pc-Talk III is the creation of the late Andrew Fluegelman who met an untimely death in July of 1985.

Commonly known as the originator of the user-supported software concept, Andrew Fluegelman revolutionized micro-communications with the creation of software that allows communications, and error free file transfer (using Ward Christensen's X-Modem protocol) between microcomputers. Currently distributed under the Freeware™ concept, Pc-Talk III is still some of the best software available, at any price, for online communications.

Pc-Talk III has been available for some time. Various unauthorized modifications (e.g. Pc-Talk versions 5.0 and 6.0) proliferate. These "new and improved" versions have added various functions such as terminal emulations, color and music display capabilities, an inherent phone hang-up command, etc. Though Headlands Communication Corporation now discourages the distribution of Pc-Talk through bulletin board systems, the original version and unauthorized upgrades, are still available from this source around the country. This could be seen as a tribute to the enduring quality of the original program.

Like MasterCom, Pc-Talk makes extensive use of menus. The most oft used include the Command Summary (Figure 2), Function Key and Default Settings menus, and the Dialing Directory. Most Pc-Talk functions are accessible by use of the ALT-key combination (e.g. ALT-D will display the dialing directory).

Pc-Talk is a fairly straightforward program for the novice user. The documentation, which is available as a text file on the distribution diskette, is well organized and cleanly presented. A modicum of knowledge or experience in microcomputer communications would be helpful (as with all of the programs reviewed!), however, the novice should still be able to get started with few problems. There is, unfortunately, no index to the manual, but the table of contents is fairly clear. Information for the advanced user is relegated to a separate section in the back of the manual.

The dialing directory (Figure 2) is clearly arranged and allows up to 60 entries. Dialing a number is as simple as calling up the directory with an "ALT-D," and entering the directory number (1-60) for the host desired. Revising or adding an entry is simple and straightforward as well. The directories of both Qmodem and ProComm are very similar in layout and function.

Capturing text to either the printer or a disk file is easily accomplished. To toggle the printer on and off, the familiar CTRL-PRTSC key combination is used. To send all text received to a disk file, the user presses the ALT-R key combination.

Keyboard macros (see above) can be stored for transmission to the host computer by the use of the function keys alone, or in conjunction with the CTRL, ALT or SHIFT keys. In this manner, up to 40 macros can be defined.

Two recurrent problems with Pc-Talk III were encountered.

The authorized version of Pc-Talk III being reviewed, does not possess an inherent command for hanging up the phone. Instead, the user must manually issue a command from the keyboard while in terminal mode. This command was "+ + +" followed by "ATH" for the Hayes Smartmodem. This deficiency will hopefully be corrected in the next release, as it has been in other, unauthorized versions, with the addition of an "ALT-H" command.

A common error, even with experienced users, is attempting to send text to the printer when it is either powered-off or offline. In the other packages reviewed, this produced a DOS error message, which allows recovery by turning on the printer or bringing it online. However, in every case using Pc-Talk III, a "Device Fault" is reported, and the user is unceremoniously dumped out of the program. On a day-to-day basis, this became a recurrent problem until I had trained myself otherwise.

QMODEM VER. 1.13

Publisher/ Author:	The Forbin Project, Inc. C/O John Friel III 715 Walnut St. Cedar Falls, IA 50613
Availability:	Distributed as user-supported software. Available from the Colossus BBS, (319) 277-0044, as well as other bulletin board systems around the country.
Price:	$20.00 suggested donation to the Forbin Project, Inc.
Compatibility:	• IBM PC and close compatibles. • 192K RAM minimum memory. • Supports Hayes modem standard command set.

Qmodem is another easy-to-use communica- ►

tions package which has gained popularity among many users of remote bulletin board systems, and at least a few librarians.

As with Pc-Talk III and ProComm, Qmodem makes extensive use of the ALT key in combination with other keys to perform various functions which are very similar to those previously mentioned. Autodialing and continuous redialing of up to 10 numbers in sequence are Qmodem features.

Qmodem employs a windowing technique to display function menus, file transfers, etc., as does Pc-Talk. A nice feature of the installation program allows the user to define the location of each window. Screen colors can also be modified which, if one has the right flair, can be quite dramatic!

Qmodem also supports a couple of features, which like ProComm, allow it to compete with some of the more expensive programs.

One is the ability of the user to exit Qmodem and "drop" into DOS (the IBM PC operating system), execute other programs (such as word processors, or editors), and then return to Qmodem all without losing the communications line. MasterCom supports this same feature by virtue of not hanging up the phone when the user exits the program, but that has its attendant problems (such as leaving and forgetting one is still connected to the host!), Qmodem's method being the more elegant.

A second feature allows the user to scroll back and forth through previous text which has passed off the top of the screen by means of the up (which enters the "scrolling" mode), and down arrow keys, and the PgUp and PgDn keys (once one is in scrolling mode). This would be especially useful to online searchers to redisplay a long search strategy without using host commands or constantly referring to a printout. 250 lines (about 5-6 screens) can be redisplayed.

With the next scheduled release, Qmodem is supposed to support a "script" language, which may allow the automation of many online sessions.

As with Pc-Talk III, Qmodem allows definition of 40 stored keyboard macros available by pressing either a single function key, or a function key in combination with either the ALT, CTRL or SHIFT keys.

The manual, which accompanies Qmodem as a disk file, is adequate, but some sections tend to be rather obscure and difficult to grasp. One section in particular on dialing-prefix entries seemed incomprehensible. The manual is also fairly technical, but again, as with the others mentioned, would probably allow novice users to understand enough to begin using the software. There is no index, but an adequate table of contents.

The installation program, which allows the user to configure Qmodem to match specific hardware requirements and options, is separate from Qmodem, having a great deal of online help available at each point.

Qmodem is a product of the Forbin Project, Inc. (taken from the science-fiction movie "Colossus: the Forbin Project" no doubt). The current version of the software is available from many bulletin board systems around the country, and is always available from the Colossus bulletin board system which is operated by the Forbin Project.

Apart from downloading Qmodem and its attendant programs from one of the aforementioned bulletin boards, or obtaining a copy from another user, there does not seem to be another way in which the program can be procured. The manual makes no mention of sending an empty disk to the author to obtain a copy.

Product support, except from other users, may be a bit hard to come by. A request for information left for the author on the Forbin Project's Colossus bulletin board produced no response over about a two week period.

PROCOMM™ VERSION 2.1

Publisher/ Author:	Bruce Barkelew and Tom Smith PIL Software Systems P.O. Box 1471 Columbia, MO 65205 (314) 449-9401 (bulletin board only) FIDO 14/619
Availability:	Distributed as user-supported software. Current version is always available from publisher at the above address by sending a blank, formated diskette in a self-addressed, postage paid mailer. ProComm is also available for downloading via telephone at the above bulletin board number, which also serves as their customer service number. In addition, PIL Software Systems has arranged with several bulletin board systems around the U.S. to always carry the most current version of ProComm:

Wellspring RBBS,
Irvine, CA (714) 856-7996
• SYSOP, Steve Clancy

Computer Aide BBS,
FIDO 19/329, Tulsa, OK
(918) 493-2137
• SYSOP, Mike Johnson

PConnecticut BBS, West
Hartford, CT
(203) 521-1991
• SYSOP, John O'Boyle

Underdog BBS, Seattle,
WA (206) 725-9233
• SYSOP, Sal Manaro

ATL/FIDO 1, FIDO 18/1,
Woodstock, GA
(404) 928-1876
• SYSOP, Ken Shackelford

TBC BBS, Albuquerque,
NM (505) 821-7379
• SYSOP, Dave Stachlin

Price: $25.00 suggested contribution.

Compatibility:
- IBM PC or close compatible.
- 128K RAM minimum memory.
- Supports Hayes modem standard command set.

ProComm seems to combine many of the best features of both Pc-Talk III and Qmodem, as well as those of higher priced programs. ProComm also makes use of the ALT key for many of its functions. The program appears to be well thought out, and is very easy to use. The user manual, available for printout from a diskette file, is well-organized, and logically arranged. There is no index (a rather recurrent deficiency it seems), but the table of contents is well detailed.

Like Qmodem, ProComm uses windows to display various menus and functions. The window displays are a bit more energetic, though, being accompanied by a rather clever sound effect (zzziiiIIPPP!). ProComm too, allows user definition of screen colors.

The dialing directory, again being very similar to those of Pc-Talk and Qmodem, is easy to use and revise. The dialing function, which supports both autodial and redial, also allows a "circular dialing queue" which will continuously redial a sequence of numbers until a connection is established.

ProComm uses the IBM keyboard function keys (F1-F10) for a variety of oft used functions. Opening and closing a disk file (for example to capture search results), is accomplished by toggling the F7 key.

Keyboard macros are available by using the ALT-0 through ALT-9 key combinations which then allow the user to define up to 10 text strings.

ProComm too, has a few features often found only in more expensive commercial software, such as access to another program (e.g. a text editor) from within ProComm, the ability to exit temporarily to DOS while keeping ProComm alive and well in memory, and the creation of "command files."

Command files allow ProComm to logon to a host system, perform a search or other query, transfer files or text, and logoff from the system, automatically and unattended by the user. This is accomplished by creating a text file (using your favorite word processor) including any of 50 plus commands which ProComm recognizes and will execute according to the plan of the command file. In this way, many online tasks requiring little or no user-host interaction (such as the monthly processing of SDI searches) can be completely automated.

ProComm can redisplay a screen buffer (CTRL-F6), which allows the user to review the last 4000 characters.

CONCLUSIONS

Of the four programs reviewed (MasterCom, Pc-Talk III 2.0, Qmodem 1.13, and ProComm 2.1), I preferred ProComm in most cases on a day to day basis, though Qmodem runs a close second.

MasterCom's problem with reliably disconnecting the telephone line, the lack of a dialing directory, and the irritation of the poorly arranged menus, made it just too much trouble to use when there were other alternatives available.

Pc-Talk III, which first introduced me to communications on the IBM PC, is still the program of choice among many users. Hopefully, the next authorized release will correct some of the deficiencies (which have been in many of the "unauthorized" versions) such as an inherent hang-up command, terminal emulations, and color/sound options.

Both Qmodem and ProComm are very similar in form and function, though each has its advantages. Qmodem sports a larger dialing directory (up to 200 entries), and allows definition of 40 keyboard macros to ProComm's 10. ProComm offers 8 different predefined terminal emulations, while Qmodem, at least currently, offers none. Qmodem's commands and functions seem to be more closely aligned with those of Pc-Talk III, so users of the latter may find the transition to Qmodem less traumatic. ►

The addition of an extra step, in Qmodem, to display the dialing directory, and to dial a number, is irritating and unnecessary.

The presence of color and sound effects in both Qmodem and ProComm is a question of aesthetics, but their use lends a delightful distraction to the often lengthy sessions the user spends in front of the CRT.

Each of these programs will perform the basic functions required for online searching and retrieval. It is vital that each program be considered, however, in the light of not only its strengths and deficiencies, but one's own particular needs and expectations.

Note: CROSSTALK XVI is a registered trademark of Microstuf, Inc.

HAYES SMARTCOM II, HAYES SMARTMODEM 1200 and HAYES SMARTMODEM 1200B are trademarks of Hayes Microcomputer Products, Inc.

IBM is a trademark of International Business Machines Corporation.

HERCULES is a trademark of Hercules Computer Technology.

SONY and TRINITRON are trademarks of Sony Corporation.

AUTHOR'S NOTE

Within a short time of this article being written, updated versions of both Qmodem and ProComm were released. Additions and changes in both were somewhat extensive, and I felt an addendum to the article was necessary.

QMODEM version 2.0

1. Now supports IBM's TopView and Quarter-Deck System's DESQview multi-tasking environments.
2. A command language is now available for script-file creation which allows the program to automatically dial an online system, perform various functions, capture data, and logoff at a preset time. The script files may be linked with specific directory entries, eliminating the need to run the script file separately. Script files may be created with a word processor or text editing program.
3. Imodem (formerly IMP) and Ymodem file transfer protocols have been added.

PROCOMM version 2.2

1. Telink, Ymodem, Modem7, Sliding Window Kermit file transfer protocols have been added.
2. ASCII upload and download procedure may now be custom tailored.
3. Emulation of the ADDS Viewpoint and Wyse 100 terminals have been added.
4. Many functions have been switched to different keys or key sequences. All upload and download options (except file logging) have been gathered together under the PgUP (upload) and PgDn (download) keys on the IBM PC keyboard. This is a definite improvement.
5. Several new commands have been added to the ProComm scripting language.
6. Several bugs, present in the former version, have been corrected.
7. The user's manual now has an index! Good show!

Reactions to both new versions on the Wellspring bulletin board system (here at the Biomedical Library) have ranged from lukewarm to ecstasy. Some minor problems have been reported with both new versions, though some of this may result from the users' unfamiliarity with the new versions.

FIGURE 1

MASTERCOM MAIN MENU – SUB-MENUS

MasterCom

```
Command Key [ ESC ]        Buffer: n/a        Drive: A        Disk Space: 148K

COMMANDS:
        T –  Terminal Mode
        S –  Send a File
        R –  Receive a File
        P –  Transmission Parameters Sub-Menu
        D –  Disk Options Sub-Menu                                  (D,V,E,R,L)
        N –  Phone Options  New PMR File Sub-Menu                   (D,R,H,F)
        O –  Terminal Options  Sub-Menu                             (U,P,M,F,V,W,E)
                                  – Current State –
                                  PRINTER: off
                                  MEMORY: off
        X –  Exit Program – Does NOT Hang Up Phone

Command ( or '?' for Menu ) :
```

SUB-MENU

Terminal Options

U	– Upload	– Send ASCII file to Remote Computer		
P	– Printer	– Echo modem input directly to printer		[no]
M	– Memory	– Collect modem input in Memory Buffer		[no]
F	– File	– Memory Buffer to Disk	(Memory ERASED after Filing)	
V	– View	– Memory Buffer on Screen	(Memory NOT changed)	
W	– Write	– Memory Buffer to Printer	(Memory NOT changed)	
E	– Erase	– Memory Buffer		

Enter Option or [ESC] to Exit:

SUB-MENU

Phone Number Options

D	– Dial Current Number		[none]
E	– Enter a New Number to Dial		
H	– Hang up Phone		
F	– Get Parameter File	(Automatically Dials New Number)	

Enter Option or [ESC] to Exit:

FIGURE 2

PC-TALK III COMMAND SUMMARY – DIALING DIRECTORY SAMPLE

↑PrtSc =	print screen contents		
↑PrtSc =	contin. printout	(or ↑PgUp)	
Alt-R =	Receive a file	(or PgDn)	
Alt-T =	Transmit a file	(or PgUp)	
transmit:	pacing '=p' binary '=b'		
tran/recv:	XMODEM '=x'		
Alt-V =	View file	Alt-Y =	delete
Alt-D =	Dialing directory		
Alt-Q =	redial last number		
Alt-K =	set/clear Func keys	(Alt-J)	
Alt-=	set/clear temp Alt keys		
Alt-E =	Echo toggle	Alt-M =	Message
Alt-S =	Screendump	Alt-C =	Clearsc
Alt-P =	communications parameters		
Alt-F =	set program deFaults		
Alt-L =	change logged drive		
Alt-W =	set margin width alarm		
Alt-Z =	elapsed time/current call		
Alt-X =	eXit to DOS		
Ctrl-End =	send sustained Break signal		

===DIALING DIRECTORY 1===

Modem dialing command= ATDT
Long distance service +#=
–#=

Name	Phone #	Comm Param	Echo	Mesg	Strip	Pace
1-WELLSPRING	1-714-856-7996	1200-N-8-1	N	N	N	N
2-TELENET	558-7078	1200-E-7-1	N	N	2	N
3-UNINET	955-3611	1200-E-7-1	N	N	N	N
. . . . .						
15----------	----------	1200-E-7-1	N	N	N	N

Dial entry #: or . . . Enter: R to revise or add to directory
M for manual dialing
F / B to page through directory
X to exit to terminal
For long distance service, precede entry # with +/–

►

FIGURE 3

QMODEM 1.13 COMMAND MENU

```
- - - Primary - - -

Alt-C   Clear Screen          Alt-Q   Redial Last Number
Alt-D   Dial Phone            Alt-R   DOS Shell
Alt-H   Hang-up Modem         Alt-W   Disk Directory
Alt-P   Change Baud Rates     Alt-X   Exit Qmodem

PgDn    Download Files        Home    This Menu
PgUp    Upload Files          ^Home   Capture File Toggle
Up-Arrow    Scroll last lines back on screen  (250)
Ctrl-End    Send modem BREAK signal
Shift-Tab   Add Linefeed toggle
Ctrl-PrtSc  Printer echo toggle
        Press [SPACE BAR] to toggle options. . .
      Press key combination or [ENTER] to return
```

FIGURE 4

PROCOMM 2.1 HELP MENU

```
                    ProComm  Help

MAJOR FUNCTIONS                UTILITY FUNCTIONS              FILE FUNCTIONS

Dialing Directory ..... Alt-D  Program Info ..... Alt-I       Xmodem send ..... F1
Automatic Redial ..... Alt-R   Setup Screen ..... Alt-S       Xmodem receive ..... F2
Emulations ..... Ctrl-F7       Kermit Server Cmd ..... Alt-K  Kermit send ..... F3
Keyboard Macros ..... Alt-M    Change Directory ..... Alt-B   Kermit receive ..... F4
Modem Parameters ..... Alt-P   Clear Screen ..... Alt-C       ASCII send ..... F5
Translate Table ..... Alt-W    Toggle Duplex ..... Alt-E      ASCII receive ..... F6
Editor ..... Alt-A             Hang Up Phone ..... Alt-H      Log Open/Close ..... F7
DOS Gateway ..... Alt-F10      Elapsed Time ..... Alt-T       Hold Log File ..... F8
Command Files ..... Ctrl-F5    Print On/Off ..... Alt-L       File Directory ..... Alt-F
Redisplay ..... Ctrl-F6        Set Colors ..... Alt-Z         View a File ..... Alt-V
Exit ..... Alt-X               Toggle CR-CR/LF ..... F-9      Screen Dump ..... Alt-G
                               Break Key ..... Ctrl-End
```

FIGURE 5

PROGRAM FEATURES COMPARISON CHART

	MasterCom	Pc-Talk III	Qmodem 1.13	ProComm 2.1
Dialing Directory	None. Parameter files used.	60 entries.	200 entries.	100 entries.
Autodial/ Redial	Yes.	Yes.	Yes. Redial up to 10 numbers in sequence.	Yes. Redial consecutive numbers.
Keyboard Macros	Yes. Ctrl-A to send up to 10 separate lines of text.	Yes. 10 function keys with ALT, CTRL SHIFT for up to 40 text strings.	Yes. Same as Pc-Talk III.	Yes. Alt-0 through Alt-9.

Character Filtering	Yes. Up to 10 characters.	Yes. Up to 6 for each directory entry.	Yes. Up to 256 characters.	Yes. Up to 256 characters.
Session Capture: Printer	"P" option at Terminal Opt. Sub-Menu.	CTRL-PrtSc.	CTRL-PrtSc.	Alt-L.
Disk File	"M" option at Terminal Opt. Sub-Menu.	Alt-R.	CTRL-Home.	F5 key.
Baud Rates	300–9600.	75–9600.	Up to 2400.	300–19200.
Terminal Emulations	Default to Lear Siegler ADM-3A.	None. Unauthorized versions may support IBM 3101.	None.	IBM 3101 DEC VT-52 DEC VT-100 Televideo 910/920 Televideo 925/950 Lear Siegler ADM-3/5 Heath/Zenith 19 ANSI-BBS
File Transfer Protocols	Xmodem (checksum, crc) Xon/Xoff Batch protocol (MasterCom only) ASCII	Xmodem (checksum) Xon/Xoff Binary ASCII	Xmodem (checksum, crc, relaxed) IMP (Qmodem only) ASCII Ymodem*	Xmodem (checksum, crc,relaxed) Kermit ASCII Telelink* Ymodem* Modem7* Kermit (sliding window)*

*Available in next scheduled release.

THE AUTHOR

STEVE CLANCY is a reference librarian with the Biomedical Library, at the University of California, Irvine, and is heavily preoccupied with microcomputer communications. He received his M.L.S. from the University of California, Los Angeles in 1980. He has worked professionally in both hospital and academic medical libraries, and has had approximately six years of online searching experience. In addition to dealing with such systems as MEDLARS, BRS, DIALOG, and INFOLINE, he is an ardent user and advocate of microcomputer-based bulletin board systems (BBS). He isthe SYStem OPerator of the WELLSPRING RBBS based at the Biomedical Library.

Communications to the author should be addressed to Stephen Clancy, Biomedical Library, University of California, P.O. Box 19556, Irvine, CA 92713; (714) 856-7309; ONTYME–CLASS.UCIBML; WELLSPRING–(714) 856-7996; COMPUSERVE–71066,416.

PARADOX: A NEW DBMS PROGRAM WITH ARTIFICIAL INTELLIGENCE FEATURES ENTERS AN ALREADY CROWDED MARKET

by Nancy K. Herther
Information Consultant

(Editor's note: Ansa announced on March 17, 1986 the release of a new enhanced version of Paradox. This update, Paradox Release 1.1., is available free of charge to all registered users. For more information contact Ansa Software, 1301 Shoreway Road, Belmont, CA 94002; (415) 595-4469—JKP)

Database Management Systems (DBMS) programs have become a basic tool in many library/information centers, as M. Koenig indicates in a popular library magazine.[1] Many products are available for both dedicated database management and as integrated packages combining DBMS features with spreadsheet and word processing capabilities.

The most popular selling package for microcomputers is dBASE II by Aston-Tate, which combined with dBASE III, has an installed base of 600,000+ units worldwide. In its promotional literature and published commentary, Ansa Software, Paradox's manufacturer, has targeted these dBASE users, as well as others, as its new program users.

Paradox (the name indicates its ease of use and power, something that has eluded DBMS program designers in the past), combines state-of-the-art programming techniques with a Lotus 1-2-3-like user interface. Paradox costs $695.

Ben Rosen, the venture capitalist behind Compaq and Lotus Development Corp., is one of the primary backers of this new company. Although new product introductions in computer software have fallen off in recent years, Ansa has preceded its October 1985 introduction of Paradox with extensive market research and beta testing of the product by users and dealers across the country.[2]

Paradox shows an obvious attention to detail. The manuals, commands, and screens are all superbly designed. The program incorporates artificial intelligence (AI) techniques along with state-of-the-art query and optimization methods. Paradox is an impressive performer and an important addition to the DBMS market.

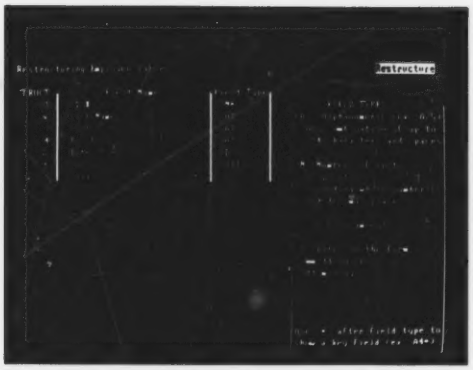
Paradox runs on any IBM PC, XT, AT or 100% compatible computer, with DOS 2.0 or higher operating system, one hard drive and one floppy drive, or two floppy disk drives, and a minimum of 512K RAM.

A PARADOX OF A PROBLEM

Running Paradox requires an IBM or other 100% compatible microcomputer, two floppy disk drives or one hard disk and one floppy disk, 512 kilobytes of RAM, and MSDOS 2.0 or above. My microcomputer system, otherwise 100% IBM compatible, was unable to run Paradox. The program easily was transferred onto my 10 megabyte hard drive, but whenever I tried to use their copy-protected disk to actually run the program, it disconnected my multifunction board (which holds much of my 640K RAM) and then refused to run due to insufficient RAM on the mother board (256K). The screen listed a 'parity error' and froze the keyboard operation.

I did encounter difficulty in contacting and dealing with the company about this problem. My first call to the company office in Belmont, California was fruitless. I was told that none of the customer support personnel was available and my name and number were taken. I never received a return call. The next week I called and immediately identified myself as a reviewer of the program for a major library/information publication. I was promptly referred to one of the product managers. He was well-informed and tried to provide assistance,

Using the SORT command, users are able to quickly move through the list of fields, identifying which of the fields to sort, and in what order. The method is easy, efficient, and remarkably fast.



Modifying or restructuring tables is done from clearly presented screen displays. By using the cursor keys, field changes can be made very quickly—adding, changing ,or deleting one or many fields in one easy operation.

but referred my questions back to the customer service personnel.

In the interim, I had a software engineer and the systems integrator who designed and assembled my system go over my system, RAM chip by RAM chip. Other programs were tested and tried and no hardware problems were found. I informed Ansa of this. However, they loyally stuck to the integrity of Paradox and assured me that my hardware must be at fault. In order to do this review I used an Eagle Spirit portable computer with 512K RAM and the system did work.

Ansa did not feel it desirable or necessary to send a replacement or substitute software program. Loyalty is an important business asset, but only if it is oriented toward the customer, not the product.

Ansa's attitude and service orientation are worth noting. No customer paying $695 for any software package should have to bear the burden of proof as well as numerous, expensive long distance phone calls to deal with such problems. Even at my suggestion, Ansa did not feel it desirable or necessary to send a replacement or substitute software program. Loyalty is an important business asset, but only if it is oriented toward the customer, not the product.

PROGRAM DESCRIPTION

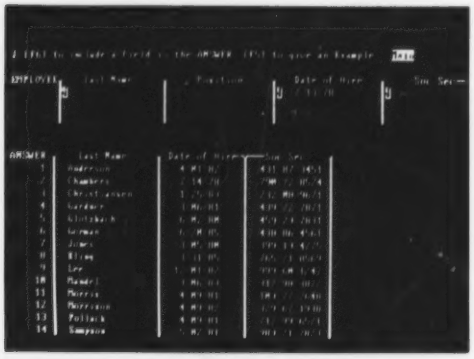
Paradox consists of three basic instructional manuals and includes two special booklets aimed at giving guidance to 1-2-3 and dBASE users. The program itself is on three floppy diskettes. The manuals are clearly written, well-indexed, and easy to use. Paradox uses the Softguard protection scheme, which allows the program to boot from a hard drive, once installed, without using the master floppy disk.

Paradox requires a minimum of 512K RAM. Ansa recommends dedicating one million bytes of storage for the program. This repre-

►

sents a major hardware investment for most users.

256K RAM IBM PCs can be upgraded to run Paradox by adding a multifunction board or RAM card to their computer. This would cost anywhere from $100-$600 in today's marketplace.



Perhaps the best single feature of Paradox is its query structure. By moving the cursor across a mock-up of the field structure, fields are selected, mathematical and other calculations on data can be ordered, etc. The requested change of information is processed with incredible speed and is presented at the bottom of the screen.

A QUICK RUN-THROUGH

Installing the program on a hard drive took about ten minutes. The manual provides clear instructions including tutorial. Once installed, I encountered no further mechanical problems in booting or using the program.

The primary screen layout for Paradox is very much like that of Lotus 1-2-3 with two lines of eleven menu choices. The manual clearly helps users learn to manipulate the program commands and functions. Function keys (F1 to F10) provide clear, quick, user aids for manipulating screens and data.

Data from 1-2-3, Symphony, dBASE II & III, PFS, VisiCalc, and other ASCII formats can be easily transferred into or out of Paradox using the TOOLS menu. I encountered no problems importing various pre-existing files into the program or exporting them back using floppies and/or hard drives.

Viewing a table in Paradox is quick and easy using the menu method. The program's response is fast and the screen layout is easy to read. Creating, altering, and merging tables were all handled with lightning speed.

The query feature is especially impressive. Using a large data file of over 12K, in just three key strokes, I was able to see a full display containing all fields in the table. Using the cursor and <F6> key I was able to quickly create a subfile listing only those elements of the file that I wished to view. In "answer" to my request, and in under 15 seconds, a new table was generated displaying only those fields that I had requested. This included over 50 entries from a file of over 200. In dBASE II the same operation took about 45 seconds.

By using conditions in addition to selecting fields, one can create subfiles or tables meeting particular conditions or requirements. The array of possible conditions includes the mathematical symbols =, <, <=, >, >=. Character symbols allow one to replace single letters or characters, (using the @ figure, for example, **Sm@th** for Smyth or Smith), or longer strings of characters (using a series of periods, **comput**. . ., for example, to retrieve computer, computers, computing, etc.). Other symbols available allow for tailoring searches in other ways (using like, not, today, blank, etc.).

I found the programming manual useful, but the query/retrieve method can be cumbersome for statistical, financial, and other calculation work. The user must carefully contrive the formulations, saving the query for future use. Compared to the ease of calculating with various integrated software packages, where specific formulae are imbedded in the program, I found Paradox disappointing. Perhaps if Ansa is able to generate the 'aftermarket,' like that which has followed dBASE products, user-oriented applications packages and books will fill this need.[3]

The REPORT function is well-designed and allows for the development of complex manipulation of data in any field and for very swift processing and printing.

A PEEK INSIDE PARADOX

The force behind the powerful processing capabilities of Paradox is its unique programming language. Paradox Application Language (PAL) is perhaps the most powerful and user-friendly programming and prototyping environment for the microcomputer. PAL is a full-featured, high-level, structured programming language that provides procedure capability, an interactive debugger, and an impressive collection of mathematical, financial, and other functions.

Along with Paradox's built-in script editor and debugger, PAL provides users with a complete applications development environment. The language and manuals are so well-written and designed that even a novice would have little difficulty designing simple routines. For developing more sophisticated, complex jobs, however, I do not feel that the manuals are enough for a casual user.

PAL allows users to get information from the database by filling out 'example forms' in which users cursor through a mock-up of a table indicating which fields to examine, display, update, or order calculations to be performed. The system is easy-to-use and learn and requires a minimum of effort. A few keystrokes are all that are needed. Queries can be stored and retrieved for future use.

I had no problem with simple statistical problem designs. I was able to easily and quickly write and perform programs to analyze and manipulate columns of data. After spending 30 minutes viewing the *PAL User's Guide*, I was able to develop a small application to add up total values in a column of data. It produced the standard deviation and variance for the data.

A more interesting, and, for information management, a more important application for PAL, involves the manipulation of strings of textual material. A relatively small file (11K) of bibliographic citations was transferred from an old dBASE II file. Words or strings of alphanumeric characters can be queried or examined in files by using MATCH. The MATCH function allows one to search for terms, words, or names in data files.

SORTING THINGS OUT WITH PARADOX

One of the most frustrating, glaring problems with dBASE II has been its sorting capabilities. Sorting is the process in which the records from one file are copied into another, in a rearranged order.

One shortcoming of dBASE's SORT command is that it sorts only in ASCII order, which poses problems due to the eccentricities of the ASCII system. For example, de Carte and De Carte would appear in different parts of a listing because the ASCII scheme differentiates upper case and lower case letters. Thus, in dBASE, one must sort files in two steps, first sorting and then alphabetizing the list.

Another sort problem is one of speed. Since dBASE II uses only about 100K RAM area for sorting (compared to 512K RAM in Paradox), dBASE responds relatively slowly. This is because the program must interact extensively between disk storage and RAM in dBASE moving data back and forth more times. This slower speed of processing was very evident during a comparison of sorting between dBASE II and Paradox. In three tests, Paradox consistently completed the sorts in about one-third or one-fourth the time required by dBASE II.

QBE

The heart of PAL's power is its use of a sophisticated query language. Query-by-example (QBE) is a relational query language developed ten years ago for mainframes.[4] It provides an artificial intelligence/natural language-like interface with the programming language. QBE is a powerful, sophisticated query method, but its choice may pose long-range problems for some users.

ANSI is currently conducting hearings with the goal of determining a standard query language to enable programs to more easily interface with mainframes, with other DBMSs in networks, and other software packages. A published standard is expected within the year and many insiders expect that the standard will be IBM's Standard Query Language (SQL).[5]

This is an important factor to be considered if buyers are planning to use their program in local area networks (LANs) or other multi-user environments, or if their purchase will be a part of a larger system of programs they would hope to interface.

Paradox is not the only DBMS using a QBE-type method. Both Aladin and Power-base use QBE methods. However, the need for a standard is apparent to anyone who has tried to access files created in one program (such as a spreadsheet from 1-2-3) into another software program (such as a communications package or DBMS). A standard query language would ensure the transportability of data by having programs use the same method of retrieving and manipulating data.

SUMMARY

Paradox is an impressive DBMS program for information management. It is easy to use and it provides fast, accurate performance. However, in order to cause someone to switch from an existing DBMS package, there must be powerful benefits to offset the time, energy, and money required. I was not so impressed with Paradox that I could give the package a blanket recommendation.

dBASE II and III, which have become industry standards, provide marked competition for any package. dBASE programs do have significant drawbacks. However, once someone has 'cut their teeth' learning the dBASE programming language, would the time required to convert to a new system be profitable? dBASE has also spawned numerous aftermarket products specifically tailored to meet the needs of diverse users. These products include specialized manuals (available in any bookstore), specialized compilers to speed processing of SORT and other commands, and, a virtual library of public domain applications software programs . . . all representing a major investment for any DBMS user.

►

For the first-time user, Paradox is a good product and offers many useful, worthwhile benefits. The program is well-conceived, designed, and organized. However, a requirement of 512K RAM would mean an additional hardware expense for many users, and the need to dedicate one megabyte of storage for the program is also a significant cost.

It is difficult to assess the potential for Paradox. If Ansa is able to develop the kind of dedicated market and user groups that the dBASE products have, then their future is assured. However, my own informal survey of IBM PC user groups, systems houses, and dealers in the midwest, does not show the kind of enthusiastic response that one would hope for. This is especially surprising to me given the splashy ads and PR campaign that Ansa launched for the product's introduction. Many of my contacts had not even heard about the product.

For those already well-served by an existing DBMS program, I would recommend a cautious approach. We are only now beginning to see the application of AI principles to DBMS programs. Paradox may indeed prove to be the wave of the future, but it will obviously be a long, uphill battle, and users would be best served by adapting a wait-and-see attitude.

APPENDIX A
MANUFACTURERS MENTIONED IN CHART

Smart Data Manager 2.0
Innovative Software, Inc.
9300 W. 110th St. #380
Overland Park, KS 66210
913-345-2424

Knowledgeman
Micro Data Base Systems, Inc.
P. O. Box 248
Lafayette, IN 47902
317-463-2581

R:Base Series 4000
Microrim, Inc.
3380 146th Place SE
Bellevue, WA 98007
206-453-6017

Manager 5.0
Manager Software, Inc.
1155 Los Altos Ave.
Los Altos, CA 94022
800-227-6621

Paradox
Ansa Software
1301 Shoreway Rd. #221
Belmont, CA 94002
415-595-4469

Aladin
Advanced Data Institute, Inc.
8001 Fruitridge Rd.
Sacramento, CA 95820
914-381-8334

Framework II
dBASE II, dBASE III
Ashton-Tate, Inc.
10150 W. Jefferson Blvd.
Culver City, CA 90230
213-329-8000

10-Base
Fox Research, Inc.
7005 Corporate Way
Dayton, OH 45449
800-358-1010

APPENDIX B
MAJOR FEATURES OF PARADOX

- Comprehensive, well-written, easy-to-use, well-indexed series of manuals.
- A full-featured programming language (PAL) for custom applications development.
- Ability to read data from existing Lotus 1-2-3, dBASE II or III, PFS File, VisiCalc, Symphony, or any straight comma-delimiter ASCII files.
- Access to commands from easy-to-use, two rows of menu items at the top of the screen, much like Lotus 1-2-3.
- Memory management and optimization routines in which the program itself selects the best way to achieve maximum speed and efficiency.
- Security methods are built-in so that access to particular tables and scripts can be encrypted, requiring a password to gain access.
- Data can be displayed in tabular formats allowing for use as a spreadsheet program, with numerical accuracy to the 15th digit for calculations.
- Report generation is made through simply moving the cursor through the report form, selecting field names to be used.

APPENDIX C
PARADOX DISADVANTAGES

- Price
- Possible System Compatibility Problems
- Huge Dedicated Memory Suggested (1 megabyte hard drive)
- Does Not Read dBASE Report Specifications & Programs
- Questionable User Support From Manufacturer
- Copy Protection Scheme

CHART 1
GENERAL SYSTEM COMPARISONS FOR SELECTED DBMS PROGRAMS+

Product	Price	Required Memory (in RAM)	Copy Protected	Security/Access System	Menu Driven	Command Driven	Multiuser Capability	Numerical accuracy (in digits)	Files can be merged and divided
Paradox	$695	512K	X	X	X	X	O	15	X
Aladin	$795	192K	O	O	X	O	O	NA	X
dBASE II ver 2.43	$495	128K	O	O	O	X	O	10	X
dBASE III	$695	256K	X	O	X	X	O	16	X
10-BASE	$495	256K	O	O	X	X	X	NA	X
Smart Data Manager 2.0	$495	256K	O	X	X	X	X	NA	X
Knowledgeman	$500	192K	O	X	O	X	X	NA	X
R:Base Series 4000	$495	256K	O	X	O	X	X	NA	X
Manager 5.0	$195	196K	O	O	X	X	O	NA	X
Framework II	$695	384K	X	X	X	O	O	16	X

+ All information was checked for accuracy. However, readers are advised to check with manufacturers for particular details and information.

CHART 2
PROGRAM SPECIFICATIONS

Product	Maximum Field size (in characters)	Maximum number of records per file	Maximum record size (in characters)	Maximum number of fields open at any single time	Maximum number of fields per record	Maximum number of fields sorted
Paradox	255	65,000	4,000	*	255	255
Aladin	32	65,535	4,048	32	250	192
dBASE II ver 2.43	254	65,535	1,000	2	32	1
dBASE III	254	*	4,000	10	128	7
10-Base	9,999	*	32,000	16	*	5
Smart Data Manager 2.0	1,000	*	4,096	25	255	*
Knowledgeman	65,535	65,535	65,535	*	255	*
R:Base Series 4000	1,500	*	1,530	40	400	10
Manager 5.0	32,000	32,000	2,048	50	50	50
Framework II	32,000	32,000	*	*	*	1

►

CHART 3

Product	File Definition: Free-form	File Definition: Command	File Definition: Can revise field descriptions at will	File Indexing: Automatic indexing	File Indexing: Number of indices per file	File Indexing: Query language included	File Indexing: Procedural language included
Paradox	X	X	X	X	255	X	X
Aladin	X	O	X	X	*	X	X
dBASE II ver 2.43	O	X	X	X	7	X	X
dBASE III	O	X	X	X	7	X	X
10-Base	X	O	X	O	*	X	X
Smart Data Manager 2.0	O	X	X	X	15	X	X
Knowledgeman	O	O	O	X	NA	X	X
R:Base Series 4000	O	X	X	X	400	X	X
Manager 5.0	O	X	X	O	O	X	X
Framework II	X	O	X	O	O	X	X

* indicates no limit, or limited only by hardware
NA indicates that the information was not available

COMING IN AUGUST *DATABASE* MAGAZINE . . .

- **LASERDISK DIRECTORY—PART 3**
- **SILVERPLATTER: AN INDEPTH LOOK**
- **TELECOMMUNICATIONS: ONLINE SOURCES**
- **SEARCHING FOR TAX INFORMATION ONLINE**

Our regular columns in *DATABASE* feature laserdisks, medical and chemical searching, and database design. In addition, Hardcopy provides honest, objective reviews of important books in our industry written by discriminating professionals.

In the DATABANK section watch for a directory containing the world's full-text newspapers online.

. . .MORE. . .current NEWS of the database industry, a provocative editorial, letters to the editor, comments, and still MORE! *DATABASE* is a tool to keep you informed and on top in the information industry.

FOOTNOTES

[1] Koenig, M. E. D. "Data relationships: Bibliographic information retrieval systems and database management systems," *Information Technology & Libraries* 4: 247-272, September 1985. pp. 247-9.

[2] Scannell, Ed. "It's harder to create 'hit' software," *Micro Marketworld* 8:55,58-9, November 11, 1985.

[3] Carroll, David W. "The dBASE phenomenon: Nurtured by dBASE II, another micro aftermarket has developed," *Software News* 5: 62-64, August 1985.

[4] "Natural language vs. QBE: Which language is best way to input?" *PC Week* 2: 146-7, November 12, 1985; and, McFadden, Fred R. & Hoffer, Jeffrey A. *Data Base Management*. Menlo Park, CA: Benjamin/Cummings Pub. Co., 1985. pp. 203-206.

[5] McLeod, Jonah, "Micro DBMSs move toward networking, standard query methods," *Systems & Software* 4: 63-64, 71, November 1985.

Communications to the author should be addressed to Nancy K. Herther, Information Consultant, 4125 Welcome Avenue No., P. O. Box 22643, Robbinsdale, MN 55422, telephone 612/536-0021.

HELP IN CHOOSING MICROCOMPUTER SOFTWARE AND HARDWARE—AN UPDATE

by Anne M. Fredenburg
Kubie Medical Library
The Sheppard and Enoch Pratt Hospital
and
W. Jean Pugh
Welch Medical Library
The Johns Hopkins University

Editor's Note: Due to a delay in the publishing of this article, twenty-four items (No. 178–No. 201) have been appended to the bibliography to keep the listing as current as possible.

The rapidly changing nature of microcomputers continues to make the selection of software and hardware a time-consuming and difficult task for end-users, administrators, and information specialists. This article can be used as an aid in the selection process. By matching numbers, the reader can use the article to lead him or her to other articles that compare or contrast specific software and hardware.

We included only articles that provided *concrete comparisons* of commercially available software packages and hardware equipment. Review articles were selected only if they were more than one page in length. We omitted newsletters and tabloid publications and excluded articles that dealt with games, operating systems, educational software, systems design, programming languages, and peripheral equipment.

This update consists of two parts: the bibliography of articles and the index to the bibliography. The bibliography indicates the number of the articles referred to in the index. The index is divided into software and hardware sections. Within each index section, the names of the software and hardware are arranged alphabetically. Index columns determine the type of comparison, i.e., hardware to hardware, hardware to software, software to hardware, and software to software. For specific examples, consult our original article cited below.*

BIBLIOGRAPHY

1. Allen, Dennis and Frederic S. Langa. "The Tandy 1000." *Popular Computing* 4(January 1985): 64-70.
2. Antonoff, Michael. "The Computer Answering Machine." *Personal Computing* 9(February 1985): 110, 112.
3. Antonoff, Michael. "New Software for Self-Help." *Personal Computing: The Plus Edition* 9(May 1985): 95-101.

* Pugh, W. Jean and Anne M. Fredenburg. "DECISIONS, DECISIONS, DECISIONS: Help in Choosing Microcomputer Software and Hardware." *ONLINE* 9(January 1985): 18-30.

4. Antonoff, Michael. "Previewing Lotus's Jazz for the Mac." *Personal Computing: The Plus Edition* 9(May 1985): 157-160.
5. Atkinson, Steven D. and Steven G. Watkins. "Managing Database Information: A Microcomputer Application in a Computer Search Service." *ONLINE* 9(January 1985): 52-66.
6. Badgett, Tom. "AT&T 6300." *Computers & Electronics* 23(March 1985): 24-25, 85.
7. Barden, William S., Jr. "Apricot XI." *Computers & Electronics* 23(January 1985): 30-31, 91.
8. Bartimo, Jim. "Macintosh: Success and Disappointment." *InfoWorld* 7(February 25, 1985): 30-33.
9. Bartimo, Jim. "Tandy Revamps Product Line." *InfoWorld* 7(March 11, 1985): 28-29.
10. Bartimo, Jim and Scott Mace. "Winning Big by Thinking Small." *InfoWorld* 7(January 7 & 14, 1985): 30-41.
11. Beechhold, Henry F. "Expert Choice." *InfoWorld* 7(January 28, 1985): 45-50.
12. Beechhold, Henry F. "Managing Projects with Power." *InfoWorld* 7(May 20, 1985): 50-51.
13. Beechhold, Henry F. "New Plus 4 Fails to Please." *InfoWorld* 7(April 1, 1985): 50-54.
14. Bell, Jack. "An Added Dimension with Sidekick." *Personal Computing: The Plus Edition* 9(May 1985): 145-151.
15. Bell, Jack. "An Alternative to MacWrite." *Personal Computing: The Plus Edition* 9(April 1985): 166, 168.
16. Bolton, Whitney. "Freestyle." *Popular Computing* 4(April 1985): 114-117.
17. Bonner, Paul. "Integrated Packages: Which One Is Right For You?" *Personal Computing* 9(January 1985): 91-95.
18. Brevdy, June. "Create a Winning Strategy." *InfoWorld* 7(April 15, 1985): 40-41.
19. Brevdy, June. "Finding the Win/Win Solution." *InfoWorld* 7(April 15, 1985): 38-40.
20. Brevdy, June. "Microsoft Chart." *Info-*

►

World 7(January 7 & 14, 1985): 56, 59-60.
21. Brevdy, June. "PC to Mac and Back." *InfoWorld* 7(March 18, 1985): 47-49.
22. Brevdy, June. "Tax Advantage." *InfoWorld* 7(February 4, 1985): 46-47, 50.
23. Brevdy, June. "Your Personal Net Worth." *InfoWorld* 7(February 25, 1985): 51-52.
24. Burke, Steven. "Compaq Edges Past AT Speed and Memory." *InfoWorld* 7(May 20, 1985): 15-16.
25. Casella, Phil. "Tracking Electronic Paper." *InfoWorld* 7(May 6, 1985): 67-72.
26. Casella, Phil. "NEC PC-8401A." *InfoWorld* 7(March 18, 1985): 42-43.
27. Chin, Kathy. "Atari Announces Six New Computers." *InfoWorld* 7(January 28, 1985): 15-16.
28. Chin, Kathy. "HP Introduces Unix Portable." *InfoWorld* 7(January 21, 1985): 15-16.
29. Chin, Kathy. "Kaypro Introduces First of the PC AT Clones." *InfoWorld* 7(March 4, 1985): 15-16.
30. Cipra, David. "Spotlight: Desktop Management that's Well-Organized but Pricey." *InfoWorld* 7(February 18, 1985): 49-50.
31. Cook, Rick. "The Integral." *Popular Computing* 4(April 1985): 96-99.
32. Corson, Greg. "The Altos 586 with the XENIX Development System." *BYTE* 10(March 1985): 247-252.
33. Crabb, Don. "Expert Ease." *InfoWorld* 7(January 28, 1985): 44-45.
34. Crabb, Don. "Home Accountant Plus." *InfoWorld* 7(April 8, 1985): 44-46.
35. Crabb, Don. "Morrow Micro Decision MD-5E." *InfoWorld* 7(March 18, 1985): 49-51.
36. Crabb, Don. "No One at Your Service." *InfoWorld* 7(April 15, 1985): 42-44.
37. Crabb, Don. "Omnis 2." *InfoWorld* 7(February 25, 1985): 47-50.
38. Crabb, Don. "Pretty Pictures, No Support." *InfoWorld* 7(April 15, 1985): 46-47.
39. Crabb, Don. "Word Brings Punch to the Macintosh." *InfoWorld* 7(April 22, 1985): 42-44.
40. Dalton, Richard. "New Wave Accounting Systems." *Popular Computing* 4(May 1985): 27, 30, 35.
41. D'Ambrosio, Bruce. "Building Expert Systems with M.1." *BYTE* 10(June 1985): 371-375.
42. D'Ambrosio, Bruce. "Insight – A Knowledge System." *BYTE* 10(April 1985): 345-347.
43. Ditlea, Steve. "Pushing WordStar." *Personal Computing: The Plus Edition* 9(April 1985): 105-113.
44. Don, Joel C. "Cornerstone." *Popular Computing* 4(June 1985): 112-116.
45. Don, Joel C. "Money Management Software." *Popular Computing* 4(March 1985): 61-72, 179.
46. Don, Joel C. "Salvo." *Popular Computing* 4(January 1985): 122-125.
47. Edwards, Jon. "Atari 800XL." *BYTE* 10(March 1985): 267-273.
48. Elia, Joseph J., Jr. "The Write Choice." *Popular Computing* 4(January 1985): 142-144, 147-149.
49. Fersko-Weiss, Henry. "Home Budgets without Pain." *Personal Computing: The Plus Edition* 9(April 1985): 50-59.
50. Field, Cynthia E. "Applewriter II." *InfoWorld* 7(January 21, 1985): 46-48.
51. Field, Cynthia E. "Softax." *InfoWorld* 7(February 4, 1985): 42-44.
52. Field, Cynthia E. "Visicalc Package." *InfoWorld* 7(March 11, 1985): 43-44.
53. Finger, Alan. "IBM PC AT." *BYTE* 10(May 1985): 270-277.
54. Forbes, Jim. "Vendors Cook Up Clones." *InfoWorld* 7(April 29, 1985): 69-70.
55. Foster, Edward. "AT: Clone Maker's Fresh Chance." *InfoWorld* 7(May 20, 1985): 18-19.
56. Foster, Edward. "A Command Performance of Word." *Personal Computing: The Plus Edition* 9(June 1985): 153-159.
57. Foster, Edward. "Outliners: A New Way of Thinking." *Personal Computing: The Plus Edition* 9(May 1985): 74-83.
58. Fridlund, Alan J. "Chartstar." *InfoWorld* 7(March 25, 1985): 45-46.
59. Fridlund, Alan J. "Taking the Numbers Bull by the Horns." *InfoWorld* 7(February 11, 1985): 42-50.
60. Geary, Terrance. "The Sanyo MBC-555." *Popular Computing* 4(February 1985): 108-110.
61. Goldner, Paul, Raymond Hood, Yoram Lirtzman and Michael Wilding. "Enable." *Popular Computing* 4(March 1985): 129-134.
62. Goley, George F. "dBASE III." *Popular Computing* 4(March 1985): 149-156.
63. Goley, George F. "Oz." *Popular Computing* 4(April 1985): 122-125.
64. Grady, Jerry. "The Compaq Deskpro." *BYTE* 10(May 1985): 260-267.
65. Grayson, Ashley and John Vornholt. "The Data General/One Versus the HP Portable." *Computers & Electronics* 23(March 1985): 62-67.
66. Green, Doug and Denise Green. "Factfinder." *InfoWorld* 7(March 18, 1985): 43, 46-47.
67. Guttman, Michael K. and Craig Krum. "Savvy PC" *Computers & Electronics*

23(April 1985): 32-34, 83.
68. Guttman, Michael K. and Michael Kirkland. "Morrow Pivot." *Computers & Electronics* 23(March 1985): 30, 86-87.
69. Haas, Mark. "The HP 110 Portable Computer." *BYTE* 10(January 1985): 290-301.
70. Hane, Paula. "Public Domain Software: Part II." *ONLINE* 9(January 1985): 13-16.
71. Harriman, Cynthia W. "No Games This Time Around." *InfoWorld* 7(May 6, 1985): 61-67.
72. Hartmann, Thom. "The Epson PX-8." *Popular Computing* 4(March 1985): 110-111.
73. Hartmann, Thom. "The Micro Merlin." *Popular Computing* 4(January 1985): 110-113.
74. Hartmann, Thom. "The Panasonic Sr. Partner." *Popular Computing* 4(January 1985): 114-115.
75. Heilborn, John and Nanci Reel. "NewWord." *BYTE* 10(February 1985): 291-294.
76. Hershey, William. "Idea Processors." *BYTE* 10(June 1985): 337-350.
77. Hessel, Brad and Redmond Simonsen. "Evaluating Macintosh after the First Year." *Computers & Electronics* 23(March 1985): 56-60.
78. Honan, Patrick. "Commodore Gets Serious." *Personal Computing* 9(January 1985): 121, 123.
79. Howitt, Doran. "AT&T Leapfrogs IBM with the Unix PC." *InfoWorld* 7(April 15, 1985): 15-17.
80. Howitt, Doran. "Avoiding Bottom-Line Disaster." *InfoWorld* 7(February 11, 1985): 26-30.
81. Howitt, Doran. "New Analytical Tools Break the Mold." *InfoWorld* 7(January 28, 1985): 29-32.
82. Howitt, Doran. "Zenith Adds AT and Three More PC Clones." *InfoWorld* 7(May 13, 1985): 15-16.
83. Jarvis, Jeff. "WordStar 2000 Goes Automatic." *Personal Computing: The Plus Edition* 9(May 1985): 135-143.
84. Keith, David C. "The Quadram Datavue 25." *Popular Computing* 4(June 1985): 82-86.
85. Kinney, Jay. "Filevision." *Popular Computing* 4(March 1985): 141-149.
86. Landis, Dick. "The Soul of a Data-Crunching Law Firm." *Personal Computing: The Plus Edition* 9(April 1985): 33, 35.
87. Leichtman, Kerry. "Tandy's New Model 200 Briefcase Computer." *Computers & Electronics* 23(February 1985): 76-77.
88. Lerner, Mark. "Three Statistics Packages." *Computers & Electronics* 23(March 1985): 42,88-89.
89. Levy, Steven. "The Life and Times of PC Junior." *Popular Computing* 4(January 1985): 92-97, 174-176.
90. Levy, Steven. "The Resurrection of PCjr." *Popular Computing* 4(May 1985): 38, 40, 43.
91. Lima, Tony. "Knowledge Man: Power at a Price." *InfoWorld* 7(April 8, 1985): 42-44.
92. Liskin, Miriam. "Create Your Own Integrated Software." *Personal Computing: The Plus Edition* 9(June 1985): 121-131.
93. Lombardi, John. "Paperback Disappoints." *InfoWorld* 7(May 13, 1985): 50-52.
94. Mace, Scott. "Commodore Shows New 128." *InfoWorld* 7(January 28, 1985): 19-20.
95. Mace, Scott. "Software Heavyweights Slug It Out." *InfoWorld* 7(April 22, 1985): 29-33.
96. Malloy, Rich. "The Epson Geneva PX-8." *BYTE* 10(February 1985): 302-308.
97. Markoff, John and Ezra Shapiro. "Public-Domain Gems." *BYTE* 10(March 1985): 207-218.
98. Markoff, John and Phillip Robinson. "Lasers, Office Publishing, and More." *BYTE* 10(April 1985): 379-384.
99. Markoff, John, Phillip Robinson and Ezra Shapiro. "What Next?" *BYTE* 10(February 1985): 371-377.
100. McComb, Gordon, "JANE: Integrated Software for Apple II Computers." *Computers & Electronics* 23(February 1985): 37, 94.
101. McMillan, Tom. "Best Buys in Computers, Part I." *Popular Computing* 4(February 1985): 70-74.
102. McMullen, Barbara E. and John F. McMullen. "Specialized Software." *Popular Computing* 4(April 1985): 75-80.
103. McMullen, John and Barbara McMullen. "Number Work Doesn't." *InfoWorld* 7(May 13, 1985): 47-50.
104. Mello, John P., Jr. "The NEC Starlet." *Popular Computing* 4(June 1985): 86-90.
105. Miller, Alan R. "MagicPrint." *BYTE* 10(January 1985): 329-332.
106. Miller, Charles A. "WordStar 2000." *Computers & Electronics* 23(March 1985): 34-35, 90-91.
107. Miller, Michael J. "The Apricot Portable." *Popular Computing* 4(May 1985): 82-86.
108. Miller, Michael J. "Business Series for the Macintosh." *Popular Computing* 4(June 1985): 104-110.
109. Miller, Michael J. "Is 'Thought Processing' Just Another Buzzword?" *Popular Computing* 4(January 1985): 18-19.
110. Miller, Michael J. "New Machines from Commodore and Atari." *Popular Computing* 4(May 1985): 11-12. ►

111. Miller, Michael J. "Texas Instruments Pro-Lite." *Popular Computing* 4(February 1985): 117-120.
112. Nelson, Robin. "The Last Word." *Personal Computing* 9(February 1985): 97-98.
113. O'Malley, Christopher. "AT&T's New Computer." *Personal Computing: The Plus Edition* 9(May 1985): 162-164.
114. O'Malley, Christopher. "First Class Showmanship." *Personal Computing: The Plus Edition* 9(June 1985): 172-174.
115. O'Malley, Christopher. "Integration and Your Apple II." *Personal Computing: The Plus Edition* 9(April 1985): 127-137.
116. O'Malley, Christopher. "The Next Generation." *Personal Computing: The Plus Edition* 9(June 1985): 52-61.
117. O'Malley, Christopher. "The Power of the Tandy 1000." *Personal Computing: The Plus Edition* 9(June 1985): 147-151.
118. Oppenheim, Michael. "Samna Word III." *Popular Computing* 4(March 1985): 134-142.
119. Petrosky, Mary. "Word Processor Users Get More for Less." *InfoWorld* 7(April 29, 1985): 31-36.
120. Pisha, Bart. "Micro Speed Read." *Popular Computing* 4(January 1985): 139-142.
121. Pountain, Dick. "Lotus's Symphony." *BYTE* 10(January 1985): 317-324.
122. Powledge, Fred. "FYI 3000 and Zyindex." *Popular Computing* 4(March 1985): 156-160.
123. Reed, Sandra R. "Six Applications in One Program." *Personal Computing: The Plus Edition* 9(June 1985): 167-168.
124. Reed, Sandra R. and Edward Foster. "Interview: Fred Gibbons on the Slippery Pole of Software Success." *Personal Computing: The Plus Edition* 9(May 1985): 104-109.
125. Renne, Mark E. "Dataease." *InfoWorld* 7(March 25, 1985): 50-56.
126. Renne, Mark E. "Dr. Halo Is No Saint." *InfoWorld* 7(April 29, 1985): 79-81.
127. Renne, Mark E. "Time Line." *InfoWorld* 7(January 21, 1985): 38-39.
128. Robertson, Barbara. "WordStar 2000." *Popular Computing* 4(May 1985): 102, 107-110, 113-115.
129. Robinson, Dan. "Making a Good Thing Better." *InfoWorld* 7(May 13, 1985): 46-47.
130. Robinson, Phillip. "The HP Integral Personal Computer." *BYTE* 10(February 1985): 98-103.
131. Rollins, Mark. "HP Introduces First Unix Transportable." *Computers & Electronics* 23(February 1985): 42-45, 88.
132. Rubin, Charles. "The Life & Death & Life of the Apple II." *Personal Computing* 9(February 1985): 72-79.
133. Ryals, Steven D. "FriendlyWriter and FriendlySpeller." *BYTE* 10(March 1985): 289-294.
134. Sacks, Jonathan. "The Apple IIc." *Popular Computing* 4(February 1985): 104-107.
135. Sacks, Jonathan. "Appleworks." *Popular Computing* 4(February 1985): 152-158.
136. Sacks, Jonathan. "AT&T Escalates the Micro Wars." *Popular Computing* 4(June 1985): 63-67, 146-147.
137. Sacks, Jonathan. "The Rising Star of Epson." *Popular Computing* 4(February 1985): 61-65, 167.
138. Satchell, Stephen T. "AT&T 6300 Personal Computer." *InfoWorld* 7(January 7 & 14, 1985): 49, 53-54.
139. Satchell, Stephen T. "AT&T Tries to Get Unix Rolling." *InfoWorld* 7(May 27, 1985): 48-51.
140. Satchell, Stephen T. "Dimension 68000." *InfoWorld* 7(January 21, 1985): 40-41.
141. Satchell, Stephen T. "Kaypro 16." *InfoWorld* 7(February 18, 1985): 59-63.
142. Satchell, Stephen T. "NEC APC III." *InfoWorld* 7(February 25, 1985): 42-43.
143. Scheluchin, Victor. "Open Access." *Popular Computing* 4(April 1985): 126-131.
144. Sillery, Bob. "The Computer Composer." *Personal Computing: The Plus Edition* 9(June 1985): 189-190.
145. Spezzano, Charles. "Xywrite II Plus." *Popular Computing* 4(June 1985): 120-122.
146. Stern, Marc. "Ability Integrates without Windows." *InfoWorld* 7(May 13, 1985): 44-46.
147. Stern, Marc. "Desk Organizer." *InfoWorld* 7(March 4, 1985): 43-44.
148. Stern, Marc. "Reflex: It Could Be the 1-2-3 of Databases." *InfoWorld* 7(May 27, 1985): 44-46.
149. Strom, Charles H. "Gifford's MP/M 8-16." *BYTE* 10(January 1985): 305-312.
150. Sullivan, Jeanette. "Using dBASE II for Bibliographic Files." *ONLINE* 9(January 1985): 46-51.
151. Summers, Tan A. "ColorPaint, PC Paint, and PC Paintbrush." *Popular Computing* 4(May 1985): 98-102.
152. Summers, Tan A. "The Compaq Deskpro." *Popular Computing* 4(March 1985): 112-116.
153. Swersey, Patricia Johnson. "Supercalc 3." *Popular Computing* 4(January 1985): 125-128, 131-133.
154. Thé, Lee. "Kaypro Is First with a PC/AT Work-Alike." *Personal Computing: The Plus Edition* 9(May 1985): 165-167.
155. Thé, Lee. "Lucid and Modular Software." *Personal Computing: The Plus Edition* 9(April 1985): 139-151.
156. Thompson, Keith. "Enable." *InfoWorld*

7(January 21, 1985): 37-38.
157. Unger, John D. "The ITT XTRA." *BYTE* 10(April 1985): 338-343.
158. Unger, John D. "The NEC APC III." *BYTE* 10(March 1985): 256-265.
159. Urschel, William. "Data Base/Filer Software." *Personal Computing: The Plus Edition* 9(April 1985): 203-207.
160. Wadlow, Tom. "The Mindset Personal Computer." *BYTE* 10(June 1985): 324-332.
161. Watt, Peggy. "AT&T Focuses on Its 'Trump' Card." *InfoWorld* 7(February 4, 1985): 15-16.
162. Watt, Peggy. "High Growth Potential for AT." *InfoWorld* 7(February 11, 1985): 34-35.
163. Watt, Peggy and Christine McGeever. "Macintosh vs. IBM PC at One Year." *InfoWorld* 7(January 7 & 14, 1985): 15-16.
164. Webster, Robin. "Expert Systems on Microcomputers." *Computers & Electronics* 23(March 1985): 69-73.
165 Webster, Robin. "ITT Xtra." *Computers & Electronics* 23(February 1985): 28-32, 84.
166. Welch, Mark J. "Convenience Software." *BYTE* 10(June 1985): 353-366.
167. Wildman, Ken. "The Commodore Plus 4." *Popular Computing* 4(April 1985): 107-111.
168. Williams, Gregg. "The AT&T UNIX PC." *BYTE* 10(May 1985): 98-105.
169. Williams, Gregg. "Dazzle Draw." *BYTE* 10(March 1985): 277-280.
170. Williamson, Bruce and Ty Halderman. "The NCR PC4." *Popular Computing* 4(June 1985): 90-96.
171. Wood, Lamont. "The Leading Edge PC." *Popular Computing* 4(January 1985): 104-107.
172. Wood, Lamont. "The Visual Commuter." *Popular Computing* 4(May 1985): 86-89.
173. Wortman, Leon A. "Megafiler and Megamerge." *InfoWorld* 7(April 8, 1985): 50-52.
174. Wortman, Leon A. "Wordstar 2000." *InfoWorld* 7(January 7 & 14, 1985): 47-49.
175. Zientara, Marguerite. "IBM's PDS Series: Who Is It For?" *InfoWorld* 7(February 25, 1985): 34-35.
176. Zilbergeld, Bernie. "Word Perfect 4.0." *InfoWorld* 7(February 25, 1985): 45-47.
177. Zimskind, Lee D. "Smart Series." *Computers & Electronics* 23(April 1985): 40-42, 85.

178. Abatemarco, Fred and Sandra R. Reed. "The Everything Machine." *Personal Computing: The Plus Edition* 9(August 1985): 78-92.
179. Bartimo, Jim. "Kaypro's Expandable Lap-Top." *Personal Computing: The Plus Edition* 9(August 1985): 122-124.
180. Cook, Rick. "The AT&T Unix PC." *Popular Computing* 4(August 1985): 76-80, 85-87.
181. Cook, Rick. "The Kaypro 286i." *Popular Computing* 4(September 1985): 88-91.
182. Fersko-Weiss, Henry. "A Lap-Top For All Occasions." *Personal Computing: The Plus Edition* 9(August 1985): 113-116.
183. Foster, Edward. "Increasing Your Clout." *Personal Computing: The Plus Edition* 9(July 1985): 133-140.
184. Grehan, Richard and Eva White. "Texas Instruments' Pro-Lite Professional Computer." *BYTE* 10(July 1985): 252-257.
185. Hartmann, Thom. "The Tandy 200." *Popular Computing* 4(July 1985): 82-86.
186. Hershey, William. "MaxThink." *BYTE* 10(July 1985): 279-284.
187. Holden, Elaine. "NCR Personal Computer Model 4." *BYTE* 10(July 1985): 258-263.
188. Malloy, Rich. "The GRiDCase." *BYTE* 10(July 1985): 129-136.
189. Malloy, Rich. "The Tandy 1000." *BYTE* 10(August 1985): 266-272.
190. Martin, Charles and Christopher O'Malley. "Interview: AT&T Computer Systems President Jim Edwards." *Personal Computing: The Plus Edition* 9(July 1985): 102-106.
191. McMahon, Steve. "The Kaypro 16." *BYTE* 10(September 1985): 276-281.
192. Miller, Michael J. "Database Frontiers." *Popular Computing* 4(August 1985): 52, 55.
193. Munro, Allen. "Helix and MacLion." *Popular Computing* 4(September 1985): 93-99.
194. O'Malley, Christopher. "TI's Muscular AT Compatible." *Personal Computing: The Plus Edition* 9(August 1985): 119-120.
195. Rabinovitz, Rubin. "XyWrite II Plus." *BYTE* 10(September 1985): 297-302.
196. Reed, Sandra R. "Three Paths to Macro Processing." *Personal Computing: The Plus Edition* 9(September 1985): 43-47.
197. Rubel, Malcolm C. "WordStar 2000." *BYTE* 10(September 1985): 291-294.
198. Sacks, Jonathan. "The Tandy 1200 HD." *Popular Computing* 4(August 1985): 87-90.
199. Sassano, Wayne J. "Overhead Express." *Popular Computing* 4(July 1985): 102-106.
200. Williams, Gregg, Jon Edwards and Phillip Robinson. "The Amiga Personal Computer." *BYTE* 10(August 1985): 83-100.
201. Wood, Lamont. "The Compaq DeskPro 286 & Portable 286." *Popular Computing* 4(September 1985): 84-87.

►

INDEX

HARDWARE	Hardware	Software
Adam	101	
Altos 586	32	
Amiga	178,200	
Apple Plus	134	
Apple II		3,10,19,34,37,38, 40,43,45,51,76,88, 109,120,124,150, 155
Apple IIc	132,134,178	3,45,50,51,52,88, 100,115,120,135, 155
Apple IIe	3,32,47,53,64,89, 96,132,134,160, 178,184,187,189, 191	3,45,50,51,52,88, 100,115,120,135, 155
Apple II +		3,43,45,51,52,88, 100,155
Apple III		18,45,76
Apricot		143
Apricot Portable		107
Apricot XI	7	7
AT&T PC	152	155
AT&T Unix PC see AT&T 7300		
AT&T 6300	6,138,142,190	6,143,199
AT&T 7300	79,136,139,161, 180,190	113,168
Atari STs	110	
Atari 400		45
Atari 800	47	45,144
Atari 800XL	47,101	45,47,144
Burroughs 2000		45
Chameleon		166
Columbia		155
Commodore Plus 4	13,78,167	
Commodore Vic 20 see Vic 20		
Commodore 64	13,78,94,101,167	3,23,34,40,45,144
Commodore 128	94	94
Compaq	141,182	3,45,71,75,128, 155,174
Compaq Deskpro Model 1	64,138,152	64
Compaq Deskpro Model 2	64,138,152	64
Compaq Deskpro Model 3	64,138,152	64
Compaq Deskpro Model 4	64,138,152	64
Compaq Deskpro 286	116,201	
Compaq Desktop 286	24	
Compaq Plus		45,128,174
Compaq Portable	64,152	
Compaq Portable 286	24,116,201	
Data General Desktop Generation		46

HARDWARE	Hardware	Software
Data General/One	65,179,182	65,76,143,145, 155,182,199
Datavue 25	84	84
DEC Pro 350		88
DEC Rainbow		16,42,45,46,118, 143,145,195
DEC Rainbow 100		199
Decmate II		199
Dimension 68000	140	46,140
Eagle PC		46
Eagle 1600		46
Epson		45
Epson Geneva		43
Epson Geneva PX-8	96	72,96
Epson QX-10	137	
Epson QX-16	137	
Ericsson		143
Faraday A-Tease	54	
Fujitsu Micro		46
Gifford's MP/M 8-16		149
Grid Compass	28,31	
GRIDCase	188	
Heath-Zenith Z-89		150
Hewlett-Packard see HP Entries		
HP Integral	28,31,130	
HP-IPC		131
HP-100		57
HP 110	65,69	65,69
HP 150	69	45,46,143
Hyperion		166,195
IBM PC	1,6,7,8,9,32,47,53, 60,64,65,68,69,74, 79,82,84,89,96, 111,117,138,139, 140,142,152,154, 157,158,160,163, 165,170,171,172, 178,179,180,182, 184,187,188,189, 191	2,3,10,11,12,16, 18,19,20,21,22,23, 25,30,33,34,37,40, 41,42,43,44,45,46, 49,51,53,56,59,61, 63,67,71,75,76,83, 86,93,97,106,112, 114,118,120,121, 123,124,125,126, 127,128,133,143, 145,146,147,148, 151,153,155,163, 164,166,174,175, 176,177,183,195, 196,199
IBM PC AT	6,10,24,29,53,54, 55,79,116,136, 139,152,154,162, 178,181,190,194, 201	2,3,12,16,25,30, 36,41,43,44,45,53, 56,61,63,67,71,83, 93,106,112,114, 118,123,125,128, 143,145,146,148, 151,155,174,175, 176,177,183,196, 199

HARDWARE	Hardware	Software
IBM PC XT	6,9,53,56,64,138, 141,162,191,198	2,11,12,14,16,18, 20,22,23,25,30,33, 36,41,44,45,51,59, 61,63,67,71,83,88, 93,106,112,114, 118,123,125,126, 127,128,143,145, 146,147,148,151, 153,155,164,174, 175,176,177,183, 195,196,199
IBM PCjr	1,89,189	3,14,21,22,45,51, 75,76,89,90,93, 114,120,128,143, 151,155,166,195, 196
IBM Portable	141	
IBM-XT 370		175
IBM 3270		175
Integral see HP Integral		
Interleaf's Office Publishing System OPS-2000	98	
Interleaf's Technical Publishing System TPS-2000	98	
ITT XTRA	157,165	165
Jacintosh 130ST	27	
Jacintosh 520ST	27	
Kaypro	130	155
Kaypro II		45,49
Kaypro 4		45
Kaypro 10		45,46
Kaypro 16	141,191	141,191
Kaypro 286i	29,116,154,181	154,181
Kaypro 2000	179	179
Leading Edge PC	171	171
Lisa		121
Macintosh	8,10,27,28,89,110, 139,161,163,178, 180,200	8,10,15,19,20,21, 37,38,40,45,76,77, 97,108,109,121, 124,147,163,173
Mindset PC	160	
Monroe MS 2000 Series		143
Morrow Micro Decision MD-5E		35
Morrow Pivot	68	
NCR		143
NCR Decision Mate		46
NCR PC4	170,187	170

HARDWARE	Hardware	Software
NEC APC III	142,158	142,158
NEC PC-8401A	26,104	104
NEC Starlet see NEC PC-8401A		
NEC 8201	26	
NEC 8201A	104	
North Star		150
Olivetti		143
Osborne		43
Osborne 1		45
Osborne Executive 1		5
Panasonic Sr. Partner	74	74
Panasonic 7000		45
Sanyo MBC-555	60	43,60
Sperry PC	171	
Sun Microsystems Workstation	98	
Tandy Model 100 see TRS-80 Model 100		
Tandy Model 200 see TRS-80 Model 200		
Tandy Model 2000	1,152	44,45,143
Tandy 1000	1,9,117,189	1,9,44,117
Tandy 1200 HD	198	9,44
Televideo AT	55	
TI Business Pro	116,194	
TI Pro-Lite	111,184	111,184
TI Professional	111,116,184	45,46,118,143, 145,155,195
Toshiba T-300		46
TRS-80 Color Computer 2	101	
TRS-80 Model I	73	45
TRS-80 Model III	73	
TRS-80 Model 4	73	
TRS-80 Model 4P	73	
TRS-80 Model 100	9,87,129,185	57
TRS-80 Model 200	9,87,129,185	
Unix PC see AT&T 7300		
Vector Graphic		150
Vic 20	13	45
Victor 9000		42
Visual Commuter	172	
Wang PC		46
Wang Professional		45,143
Zenith Desktop		45
Zenith Z-138	82	
Zenith Z-148	82	
Zenith Z-158	82	
Zenith Z-171	82	
Zenith Z-200	82	

►

SOFTWARE	Hardware	Software
Ability	123,146	123,146
Accounts Payable	163	
Accounts Receivable	163	
AppleWorks	115	
Applewrite	135	
AppleWriter II	50	48,119
The Art of Negotiating	18	
AtariWriter	47	
Back to Basics	40,182	
Bank Street Music-Writer	144	144
Bank Street Writer		119
Be Your Own Coach	3	
Borland International Sidekick see Sidekick		
BPI Personal Accounting	45	45
BPS Business Graphics	142	
Business Management Series	175	
Calc	94	
Calc-To-Go	104	
Calcstar	60,96,141,154, 179,181,191	
Calculator	131	
Chart	8,15,20,77,84, 108,163	15
Chartstar		58
Clout	183	
Co-Pilot	35	
ColorPaint	89	89,151
Complete Personal Accountant	45	45
Coping With Stress	3	
Cornerstone	44,71	
Correct It	35	
Crisp	59	59
Crosstalk	165	
Crosstalk XVI 3.5	6	
Data Communications	131	
Data Perfect	47	
Data-Star	154	
Database Manager II		159
Dataease	125	
Dazzle Draw		169
DB Master		192
dBASE II	6,7,53,61,64,107, 111,149,158,160, 165,182	61,62,91,92,95, 150

SOFTWARE	Hardware	Software
dBASE III	6,64,65,84,111, 113,117,150,168, 182,184	62,91,95,150
Desk Accessory Mover	97	
Desk Organizer	147	36,147
Deskmate	1,9,117	
Display Write		119
Dr. Halo	126	
Documate		70
Dollars and Sense	8,45	45
Dow Jones Home Budget	45	45
Dow Jones Investment Evaluator	158	
Dow Jones Link	158	
Dow Jones Market Analyzer	158	
Easy Writer II	111	119
EasyWriter	60,163	
EasyWriter I	165	
Electric Desk	111	
Enable		61,156
Executive Filer	76	76
Executive Writer	76,93	76,93
Expert Choice	11	102
Expert Ease	33,164	102
Factfinder		66
Fido	97	
File	15,108	15,192
Filer	94	
Filevision	8,10,77	85,192
Final Word	160	
Finance Manager	45	45
Financial Cookbook	45	45
Financial Manager	158	
Financial Planning Series		45
Financier II	45	45
1st Base	77	
Flight Simulator	1,64,65,84,117, 140,141,165,170, 182	
411		25
Framework	6,111,146,182, 184	10,17,61,63,76, 124,146,186
Freestyle	16	
Friday!	113,158	159
FriendlySpeller	133	
FriendlyWriter	133	133
Full Screen Editor	97	
FYI 3000	25,86	25,122
Gem Write		119
General Ledger	163	
Harvard Project Manager	6	

SOFTWARE	Hardware	Software
Helix		81,192,193
Higgins	36	36
Home Accountant Plus	34,45	45
Home Budget, jr	89	
Homeword	89	
HP Windows	28	
Idea!	57	
Idea Processor	76	76
INDEX.COM		70
Informix	131	
Infostar	60,141,179	
Infostar Plus	181,191	
Insight	42	
JANE	94,100	
Jazz	77	4
Kermit	97,160	
Keyworks	196	196
Knowledge Man		91,95
Leading Edge Word Processing	171	
Letter Perfect	47	
Lotus 1-2-3	1,53,65,69,84,90, 111,117,140,141, 171,182	4,17,61,63,80,92, 121,123,153,156
Lotus 1-2-3 Version 1a	6	
Lumena	160	160
M.1	41,164	
M.1.a	164	
MacDraw	77	
Macintosh Chart		20
MacLion		192,193
MacPaint	8,10,77,160	4,85,89,99,126, 151,160,169
MacProject	77	
MacTep V.187	97	
MacTerminal	8,77,97	
MacWrite	8,10,15,77	4,15,39,66,108
Magic Bind		105
Magic Index		105
Magic Print		105
Mailmerge	60,141,154,158, 179,181,191	
Management Edge	163	
Managing Your Money	45,90	45
Maxthink		109,186
Megafiler	173	
Megaforms	8	
Megamerge	173	
Memomaker	65,69,131	
Menuedit	97	
Microsoft Chart see Chart		

SOFTWARE	Hardware	Software
Microsoft Word see Word		
Micro Speed Read	120	
Microtrak	131	
Mite	141	
Model 100 Personal Finance		45
Modem 8-16	149	
Money Street	45	45
Multimate	53,84,111	128
Multiplan	8,15,28,53,65,77, 84,86,108,111, 113,131,158,160, 163,165,168,184	15
The Music Shop		144
MVP-Forth	164	
Negotiation Edge	19	
New	35	
NewWord	75	75
Notebook	65	159
Number Works		103
Omnis 2	37	37
Omnis 2 Version 2.10	37	37
One Ringy Dingy	97	
Open Access	143	
Overhead Express	199	
Overvue		192
Oz	63	63
Pagemaker	8	
PAM	69	
Paperback Writer	93	93
PC Chart		20
PC File	97	159
PC Paint	151	151
PC Paintbrush	151	151
PC/PFP II		45
PC Storyboard	114	
PC Talk	97	
PC Talk III	97	
PC/Tax Cut		45
PC to Mac and Back	21,77	
PC-Write	97	
PCjr Colorpaint	90	
PeachText	53	
Perfect Calc 2.0	155	
Perfect Filer	155	
Perfect Link	155	
Perfect Writer	155	155
Personal Communications Manager	89	
Personal Decision Series	175	
Personal Filer	104	
Personal Money Matters	45	45

SOFTWARE	Hardware	Software
Personal Net Worth	23	
Personal Pearl	5,35	
PFP	45	45
PFS:File	8,74,124	
PFS:Graph	74	58
PFS:Report	8,74	
PFS:Series	124,182	124
PFS:Write	84	119
Picture Perfect	131	
PIE Writer		155
PMate	53,86	
Pop-Ups		166
Portable Calc see Calcstar		
Portable Scheduler	72,96	
ProKey	196	196
Quest Bookkeeping	35	
Quicken		45
R:Base 4000	86	95
R:Base 5000		95
Red Ryder 3.0	97	
Reflex	148	81
ReportStar	154	
The Running Program	3	
SalesEdge	163	
Salvo	46	
Samna Word III	84,118	128
Savvy PC	67	
Sidekick	6,14,65,165,166, 170	36,147,166
Sketch	107	
The Smart Checkbook	49	
Smart Software System	177	
SmartCom 2.0	6	
SPELLM20.COM		70
Spell Perfect	47	
Spellguard	149	70
Spellstar	60,141,158	
Spotlight	30	36,147,166
SPSS PC	88	59,88
Starburst	141,154	
Starcross	160	
Statpro PC	59,88	59,88
SuperCalc	5,35,107,149,158	153
Super Calc 2	7,53	153
SuperCalc III	7,107,153,182	153
SuperKey	196	196
Superplanner	107	
Superproject	12	
Superwriter	107	
Switcher	8	
Symphony	121,146	10,17,61,80,121, 124,146
Systat	86	59

SOFTWARE	Hardware	Software
Tax Advantage	22	
Tekalike	38	
Telcom	104	
Terminal	65,69	
ThinkTank	8,10,65,76,109	76,109,186
Thor		76
Thunderscan		99
TimeLine	127	
TK!Solver	131	
TM/1		81
Trajectories		88
28 Day Dieter	3	
Unify	131	
VEdit	6	
VisiCalc	52,74,89,163	103,153
Volkswriter	6,111,184	
Volkswriter Deluxe		75,119,133,195
Watson System	2	
Word	15,56,84,108,113, 168	15,39,108,119, 128
Word Perfect		119
Word Perfect 3.0		176
Word Perfect 4.0	176	176
WordStar	5,7,43,53,60,64, 65,69,72,74,84,86, 89,96,107,111, 112,128,141,142, 149,165,179,182, 184,191	26,75,83,92,105, 106,112,119,128, 174
WordStar-To-Go	104	26
WordStar 3.3	6,117,158,181	133,195,197
WordStar 3.31p	154	
WordStar 2000	83,106,112,128, 174	83,106,112,119, 128,174,197
WordStar 2000 Plus	83,112,128	83,112
The Write Choice		48
Writer	94	
XyWrite	53	
XyWrite II	6	
XyWrite II Plus	145,195	195,197
Your Personal Net Worth	45	45
Zyindex		122
Zyindex Plus	25	25
Zyindex Professional	25	25
Zyindex Standard	25	25

Communications to the authors should be addressed to Anne M. Fredenburg, Kubie Medical Library, P.O. Box 6815, Towson, MD 21204 and/or W. Jean Pugh, 6163 Parkway Dr., Baltimore, MD 21212

DATABANK™

. . .a section designed to inform information professionals about speciality databanks, their capabilities and applications.

Selecting An Electronic Mail Service. . .A Quest For The Holy Grail?

by Susan A. Tucker
Director of Contracts and Grants
Association of Educational Communications and Technology
and Visiting Professor,
George Mason University

Like the Holy Grail, the quest for the perfect electronic network is neither easy nor fast. At least that has been our four year experience at the Association for Educational Communication and Technology. Today, you hear about how electronic mail is a $100 million + a year industry. But until recently, it was very difficult to understand what options and services existed. Conceptually, it was easy for our board to support the idea of electronic networking given the internationally dispersed nature of our 5500 members. By way of a background, about one-third of the membership work at the school district level, primarily as media center directors and librarians; one-third of the membership work in institutions of higher education in a variety of roles including professorial, instructional media administration, and special libraries; and the final third represent industry and training personnel committed to infusing educational technology in training programs. But practically, we found ourselves hamstrung by a number of factors, not the least of which was financial. At this point it might be helpful to chronicle some of our experiences.

A BRIEF HISTORY. . .

First, let me say that AECT's track record with electronic mail began on a very small scale. About four years ago, our association received a U.S. federal grant to network school districts and state department of education staff in an effort to identify effective educational software—that is, *effective* as defined by local users, not national authorities. Though comprised of less than 200 initial participants, the scope was national and involved representatives from almost every state. In retrospect, this project served as an excellent pilot for exposing us to the possibilities of this technology and realistically testing some of its limitations. We began with a command-driven university-base carrier and two years later switched to a subnetwork on The Source. The reason for the switch was based upon the need for increased accessibility across the country, the need for a service which could offer both command- and menu-driven options, and a system which would hold the expanding size of our database on educational technology. As federal funding drew to a close, our board made the decision to expand the application of electronic mail to the entire association. I was charged with reviewing the needs of the membership, resolving user criticisms of the existing system, and, if a change was indicated, identifying the best network/carrier for our needs. Our needs came down to four basic services:

1. the sending and receiving of mail electronically;
2. long distance use of one computer by diverse equipment;
3. posting association news on special bulletin boards;
4. searching and reading our educational technology database.

In addition, as those of you who have used some of the commercial networks are well aware, our association-style application experienced some limitations on The Source. Specifically, I needed to respond to criticisms about: amount of time it took to access our menus, especially if using the menu-driven feature; inflexibility in customizing numerous bulletin boards; being required to pay a subscription fee to another network (Edline) in order to access our network (i.e., TechNet); and experiencing value-added charges in order to transmit and receive at 1200 baud and faster.

RESULTS OF THE QUEST. . .

As you can see by the needs and criticisms, more than a standard Local Area Network (LAN) was indicated. Over a year ago, I began to research a variety of networks in search of the perfect network. The following generalizations became readily apparent:

- Each user of electronic mail has unique needs which should be recognized. AECT identified 18 major applications or uses which were desired by our membership. After our needs assessment, we recognized one major strategy:

  for AECT's electronic networking to be most successful, we needed to develop an "umbrella" network which would allow diverse professional associations and groups to operate independently as well as permit sharing information and resources when deemed appropriate.

  Judging from the experience of other association networks, a clear strategy is critical to one's success in retaining existing users and attracting new subscribers. Of a related nature, the network is only as good as it is used. You could have some terrific mail options and even offer special databases, but unless it is used *regularly* by *grassroots* users and sincerely supported by organizational leadership, your network will wither on the vine. If you are trying to decide on an existing system, definitely take the time to review the directory of subscribers. A good directory provides a searchable listing of location-independent names, addresses, and several fields describing background information about the subscriber. And be cautious when user names are associated with host names because correct identification of users can become a major problem, further complicated by the fact that frequent users often migrate to another host or are authorized at several hosts.

  Expect individual subscribers to pay somewhere around $500 per year for moderate use of an electronic mail, store and forward file transfer, and bulletin board system; some electronic communication systems charge a membership fee and will bill for the actual time (in minutes) you spend using the system per month.

  Because many of the American-based electronic mail services cater to the volume usage of the *Fortune* 1000 companies and the U.S. government, you may find it helpful ►

ABOUT X.400: STANDARDIZATION

As you can see from the polygot of electronic mail systems available worldwide, some sort of bridge was needed to unify communications. By 1980, international attention to Message Handling Systems (MHS) began to emerge. One of the most significant efforts involves the International Consulting Committee on Telephone and Telegraph (CCITT). In 1981, the CCITT started to study the standardization of MHS which finally resulted in eight new recommendations, approved in October 1984, and known as the *X.400 series Recommendations*. These international standards have the advantage that they allow communication between computers of different manufacturers as well as communication between different carriers. The first X.400 systems exist already. The University of British Columbia (Canada) has a system known as EAN and the Japanese company KDD has developed another for the Japanese PTT. Major manufacturers, including IBM, have publically announced their commitment to implement the CCITT international standards.

So where are we heading in electronic mail? Crystal ball gazers tend to be in agreement that, prompted by X.400, we will soon be able to:

1. **have interconnections between public computer based messaging systems; the new EMAIL will be global;**
2. **interconnect between MHS's to TLX/TTX/ and hardcopy postal services—that is, complete interconnections with the older forms of messaging;**
3. **interconnect private MHS and databases with public "backbones"; this phenomenon is already occurring as evidenced by the activities of PABX/host/UTX based operations as well as local area networks (LANs);**
4. **interconnecting personal computers with individuals and small businesses and associations; and finally,**
5. **open-ended types of protocols will emerge which will make more user friendly the interchange of electronic data.**

98

to contact the value-added resellers of the major carriers if you anticipate smaller usage, yet want some custom services. For example, AECT contacted GTE's reseller, The Networks, and we were able to negotiate less expensive rates than the random individual subscriber (over $100 savings per mailbox), cheaper online charges, as well as receiving customized bulletin board design assistance, and special billing procedure. As you may notice in the checklist that follows this section, the pricing structure of each system varies greatly. If at all possible, encourage individual users to fund their subscription and online usage using *hard monies*. Several not-for-profit organizations have learned the hard way that it is difficult to attract users when the soft money dries up!

- There may be costs to rent phone lines if the computer which houses the electronic mail system is not in your locale. If this is the case, costs can be lowered by joining a company which rents the lines at a lower rate because they can handle a large volume of traffic. Known as carriers, the major companies are GTE's Telenet and McDonnell-Douglas's TYMNET. UNINET is emerging as a third force in the industry. In Canada, Datapac is the communications network provided by Bell of Canada that connects with TYMNET and Telenet. In the rest of the world, telecommunications tends to be a nationalized industry.
- The electronic mail industry is worth over $100 million a year, and as a result, new services are quickly jumping into the fray of a once slow to emerge market. The major electronic mail services are offered directly by the carriers such as GTE's Telemail and OnTyme on TYMNET. Other systems have evolved which use the carriers' lines and charge extra for their services. Some of these networks can be found on The Source, CompuServe, Western Union's EasyLink, ITT's Dialcom, and MCI Mail. If you are wondering when AT&T will introduce electronic mail, it is reported that the company has been using electronic mail in-house for months, as well as doing pilot testing in the private sector. AT&T Mail already has computer-synthesized voice technology that allows system users to check for Email when they don't have access to a computer. Look to this trend increasing.
- Using a typical electronic mail system, most services of the U.S. Post Office are open to the user (e.g., registered mail, bulk mail, express mail, and international mail). Other possible mail options could include:
  - timed delivery where you, as a sender, can write a message, say on Tuesday, file the message immediately, and then tell the system exactly when you want the message sent (next Monday at 2 p.m. EST, or every Saturday at noon for the next four weeks, etc.).
  - distribution lists which enable you to send messages to multiple users simultaneously; many systems let you file frequently used lists which simplifies future transmissions.
  - private mail which is a security precaution. Basically, it requires a knowledge of a second password in order to release the *private* message to the reader. This function is especially helpful where several people are sharing one mailbox.
  - scan tables where the reader is informed of new messages received. Usually these scan tables list the number, date/time of transmission, sender, 32 character summary of the message's subject, and the number of lines or characters in the transmission.
- You can send short telex style memos, full-text letters, and even voluminous proposals, to anyone who uses the SAME electronic mail system, at a fraction of the cost of telex. These communications usually arrive at their destination immediately. All the addressee needs to do to read the message you send is to sign-on the system. To forward the message to another user in the system may involve only one keystroke. Many systems also have the capacity to send in batches or a list of addressees simultaneously, for the same price that you would be charged for sending to only one person. In the near future, once the electronic industry accepts an international communication standard (and many are laying bets that it will be X.400), subscribers on competing electronic mail and/or database systems will be able to *gateway* or interconnect to each other. While the technology for this is here, the political and economic factors may generate long delays.
- Consider if you are in frequent need of same day or overnight hardcopy delivery services. A new development this year lets an electronic mail user bypass services such as Federal Express' ZapMail, at a 40% savings, by sending transmissions from your own terminal or a personal computer. For example, if you are a Telemail user, you would transmit a letter to the GTE node closest to your desired destination and the GTE office there would download your transmission to hardcopy and deliver this within 24 hours to your addressee. In fact, some services

such as MCI Mail let you register your own business letterhead and signature for use in hardcopy delivery. Other systems have two-way (inbound and outbound) interfaces with the 1.6 million telex subscribers throughout the world. Acquiring your own telex account number is usually accomplished online for no extra fee and within a 48 hour period. MCI Mail charges $1.00 per ounce (i.e., 400 characters) to send a telex. Imagine being able to emulate a telex terminal with your own personal computer! A new feature which will be increasingly available on the major systems, involves the capacity to interface with voice mailboxes. That is, turning voice messages into data messages and reciprocally, turning data into voice messages. For those potential EMAIL users out there who are handicapped physically or are novice typists, consider what bonds this breakthrough will unloosen.

- Speaking of novices, not all systems are menu-driven. Expect to see just after you logon to some networks, just a command prompt. Therefore, your novice users are dependent upon system manuals (in some cases repleat with technical detail beyond all but systems engineers' understanding !), training sessions, or customer support services. While a brief, everyday language type of manual is critical, and 24 hour toll-free hotlines important, the most make-it or break-it aspect of the system in our experience, has been the novice's access to direct training. Make sure you can identify someone on your staff or in customer support who can provide the initial hand-holding for the technically anxious, assist in software/equipment selection, and convincingly demonstrate how simple EMAIL is to use, REALLY. We formally introduced our new network at AECT's annual meeting in January 1985. With over 10,000 attendees and over 600 competing exhibits, we kept three demonstrators busy throughout the conference. In the course of setting up other association *nets* under the TechCentral umbrella this year, we have found this technique to be an especially easy and effective technique for attracting new members.

- Beyond that, for any system to work, you must have a critical-mass of users to communicate with each other. Providing a database is not enough. So do not hesitate to ask the number and kind of subscribers on a system. Some systems are not at liberty to report a number while others provide an online listing of subscribers. CompuServe claims it is the largest system with 250,000 users. MCI Mail reports over 200,000 individual and corporate accounts. Federal Express reports its ZapMail service has 4500 subscribers. Remember that some systems specialize in large corporate accounts, and enumerate by number of corporations, not the number of individual subscribers.

- Three pieces of equipment are required: a telephone or dedicated phone line, a terminal or personal computer (almost any kind), and a modem. If you have a microcomputer, you must insert appropriate software to convert the pc into the terminal mode. Given minimal users needs, this means prospective users could incur less than $500 in equipment costs for the initial entry to electronic mail. The Radio Shack 100 portable computer with built-in 300 baud modem and software is a case in point. In fact, depending on the needs of your system, even less expensive terminals can be used.

- Your equipment generally only needs to meet these criteria: ASCII character transmission, asynchronous (dial-up) communication, 300 or 1200 bits per second (bps), half or full duplex, and even or no parity. Several networks offer 2400 (and faster) baud transmission, and a few will be offering expanded graphics options this fall. Besides ASCII, some EMAIL systems include other protocols such as the IBM 3780 protocol.

- Once you have the equipment, the sign on process usually requires subscribing to a system (some are free and I urge you to experiment with local user groups), and using an identity number (ID) and a security password to protect confidentiality and prevent unauthorized people from using your personal mailbox. We found some networks offer discounts to organizations who need more than one mailbox. This can save you money and hassles in the long run. Rather than sharing one ID (as the management of a shared ID is difficult in all but the most accountable environments), take the discount. Usually, a user can (and should) change his/her password at least weekly. Several systems offer a multi-stage password process for heightened security. All in all, attention to security issues is becoming an increasing phenomenon with electronic mail providers. System designers are beginning to confront the problem of message *routing*; that is, desseminating information via an electronic message system so that the message reaches all those to whom it is valuable, while it is filtered through those who are not interested in the message for either cognitive, social, and/or economic reasons.

►

Research in these three approaches to information filtering is currently being undertaken at MIT by the Center for Information Systems Research. Finally, for those wanting the ultimate in security, encryption prevents any third party, known as adversaries, from capturing the transmission for analysis. In fact, in deluxe systems, the adversary is unaware that any communication is occurring at all.

- Finally, combining the competitive nature of the industry with rapid technical changes occurring with electronic transmissions, many networks are offering services other than EMAIL. Expect to see more systems offering: customized bulletin boards with search capacity, extensive file storage functions, 24 hour support hotlines, encryption, faster transmissions with improved modems and optical cable installations, electronic conferencing options, electronic publishing, and, the capacity to gateway with other EMAIL and databases. In order to remain current with the industry, the following resources are very helpful:

Expect to see more systems offering: customized bulletin boards with search capacity, extensive file storage functions, 24 hour support hotlines, encryption, faster transmissions with improved modems and optical cable installations, electronic conferencing options, electronic publishing, and, the capacity to gateway with other EMAIL and databases.

1. ELECTRONIC MAIL ASSOCIATION—contact Michael F. Cavanagh, Executive Director, EMA, Suite 300, 1919 Pennsylvania Ave, NW, Washington, DC 20006 or call (202) 293-7808. A complete up-to-date membership list of major systems is available (no charge) from the association.
2. *Link Up*—is a monthly magazine of online news and videotex news for business, personal and educational use. Annual subscriptions are $22 and can be ordered from Learned Information, INC, 143 Old Marlton Pike, Medford, NJ 08055. Electronic mail addresses are:
   CompuServe: 72105,1753
   MCI Mail: LINK-UP or 277-3464
   The Source: STU329
3. Though very expensive ($995 to be exact), *The Survey of Electronic Mail* is a comprehensive, 600 page reference work with detailed descriptions of over 60 major electronic mail products and services. Published by Walter Ulrich Consulting, 2626 South Loop West, #450, Houston, TX 77054 or call (713) 666-5433.
4. Finally, an excellent industry newsletter is *ELECTRONIC MAIL AND MICROSYSTEMS NEWSLETTER*. It is published by International Resource Development Inc, 6 Prowitt Street, Norwalk, CT 06855; telephone 203/866-7800. Cost $315/year.

HOW OUR ELECTRONIC MAIL NETWORK WORKS. . .

Sending and receiving electronic mail tends to be a very simple process. As you can see by the following example drawn from TechCentral's Telemail service, the mail function requires about three steps after the initial logon.

STEP 1. Dial the Telenet phone number in your locale.

STEP 2. Press the RETURN key three times and wait for the network to respond.

```
(RETURN)  (RETURN)  (RETURN)
TELENET
XX  XXX
TERMINAL =
```

STEP 3. Telenet will send you a sign, and you type: **TELEMAIL** or an abbreviated:

```
TELE
Telemail (RETURN)
```

STEP 4. Telemail will ask for your user name and then the password. A nice feature of Telemail not found on all systems is that the password does not appear on the screen once typed, which promotes security. You have three chances to sign on correctly before the system shuts down.

```
User name? XXXXXXX (RETURN)
Password? XXXXXXX (RETURN)
```

STEP 5. Once you have correctly entered your user name and password, Telemail will respond with:

```
Welcome to TELEMAIL!
Your last access was (date) (time)
```

STEP 6. If new messages have been posted to your electronic mailbox, you will receive a message to check Telemail. If you have other bulletin boards or updates to databases on your network, Telemail's system will notify the user of these also. Then a scan table will appear with a summary of messages received

since your last access. The first column is the scan number which is an incremental numbering of your mailbox messages. You can use the scan number to select particular messages for priority reading. The second column shows the date and time delivered; the third column shows the user name of the person who sent each message (note Telemail uses names instead of numbers for this purpose which our members applaud because they find it easier to remember names). The fourth column allows for a 32 character summary of the message and the fifth column indicates the number of lines contained in each message.

CHECK these bulletin boards:

```
TELEMAIL

No.  Delivered        From        Subject              Lines
1    Sep 1  9:16     G.Uhlig     Board Mtg. Minutes     523
2    Sep 1  9:42     S.Tucker    Report reminder         16
```

STEP 7. Our electronic network on Telemail, known as TECHCENTRAL, has over 200 bulletin boards dealing with association business in each state, as well as several databases, and, a national share bulletin board. These services were put in menu format for our less experienced users. Experienced users have the choice of skipping menus with an express feature. Assuming you are using a menu, the following will appear:

```
                WELCOME TO TECHCENTRAL

HOW WOULD YOU LIKE TO USE TECHCENTRAL?

SELECT ONE OF THE FOLLOWING LETTERS:

    A  to READ your new mail
    B  to SEND a message
    C  to use TECHCENTRAL MENU
    D  to use EXPRESS feature
    E  to visit other NETWORKS
    F  to check TECHCENTRAL bulletin boards
    G  to complete SURVEY
    H  to see LISTING of all bulletin boards
    I  to see USA TODAY
    J  to END your session

ENTER YOUR CHOICE AND PRESS RETURN.
```

STEP 8. If you had selected **D**, you would have returned to command mode and been able to use the express feature. It is a simple process to send and receive a message, as well as to check informational or sharing bulletin boards. When finished with any command, the system always returns you to command prompt.

A. To read your new mail after scanning (STEP 6), at command prompt, type **READ** (plus the number(s) of the messages you want to read. Separate numbers with a comma as in the example.

```
Command? READ1,2 or R1,2
```

Once you are finished reading a letter, the system will return with an Action prompt. You have several choices: to purge or eliminate the letter from the memory banks, forward the message to another mailbox, compose an answer, or file the message in your electronic files on the system. If you accidentally purge a message, it can be easily retrieved within 24 hours.

B. To compose and send a message:

```
Command? COMPOSE or C
To: H.Gordon
CC: D.Zeisloft
Subject: EMail article

Text:

Hi Helen – here is the article I promised.

  (file transmitted)

– Susan

. (RETURN)

Send? YES
Msg posted (date) (time)Msg:GLCT-4926-5801
Command?
```

C. If you want to check a bulletin board, just type **CHECK** and the name of the bulletin board you want to read. After getting a scan table, type **READ** and the numbers in the scan table which you desire.

```
Command? CHECK computer.news (RETURN)
Now using Board Catalog
Command? SCAN ALL
```

(Now you can see a scan table in the same format as STEP 6.)

```
Command? READ 1-4
```

After reading your selection, you will be prompted by a **Command?** If you want to leave the current bulletin board and visit another (say one entitled, TV.NEWS) you would type **CHE**

►

or **CHECK** at the first command prompt and at the second prompt, check for the next bulletin board as follows:

```
Command? CHECK
Command? CHE TV.NEWS
```

STEP 9. To quit the system, type **BYE** at the command prompt.

```
Command? BYE
This TECHCENTRAL session is now complete.
TELEMAIL DISCONNECTED. (date) (time)
```

- As you can see by our case, networks and carriers which offered electronic mail services exclusively in the beginning must now offer other services in order to remain competitive. In fact, in the past few years, bulletin boards have proliferated at such a rate that boards have tended to become specialized and less informal—hence, conforming to a menu format. A word of caution. Boards can be *open* and *closed*. On an *open* board, everybody who uses the system will be able to read what you have posted. *Closed* boards, on the other hand, limit access to those system users with special security measures. Finally, notice some of the other functions possible on many networks. You can set up surveys where the responses are automatically sent to the designer without the respondent typing a send command! And many networks are offering simplified search strategies of small and large databases without the complexity of Boolean logic. The following items were found to be helpful in evaluating the capacity of bulletin boards available on commercial networks:

DOES THE SYSTEM HAVE BULLETIN BOARD CAPACITY FOR:

- —open boards
- —closed boards
- —monitored boards (notification of unread information)
- —can scan boards
- —can search by number
- —can search by date
- —can search by sender
- —can search by subject
- —has national level information and network capacity
- —has state/local level information and network capacity
- —has keyword search on subject line
- —automatically informs user of monitored boards
- —is menu-driven or command-driven?

ELECTRONIC MAIL SYSTEMS FEATURE CHECKLIST

FEATURES	GTE TELEMAIL TECHCENTRAL	COMPUSERVE InfoPlex EasyPlex	FEDERAL EXPRESS ZapMail	ITT Dialcom	MCI MCI Mail
1. ELECTRONIC MAIL					
—business/institutional subscriptions	yes	yes (InfoPlex)	yes	yes	yes
—personal/individual subscriptions	yes	yes (EasyPlex)	yes	yes	yes
—has mail options	yes	yes/yes	yes	yes	yes
—has urgent mail	yes	yes/no	no		
—has registered mail (acknowledgement requested)	yes	yes/yes	yes		
—has private mail (second level password option)	yes	no/no	no		no though offers unlisted accounts

- A third option of many mail networks now involves teleconferencing. On an informal level this is known as *chatting*—a live, keyboard-to-keyboard conversation between those people using the system at a particular moment. It resembles live telex communication but at several times the speed and at a fraction of the cost. With certain communications systems like The Source, you can record the conversation and file it, get a printed copy simultaneously, or file it and print it out later.

  One of the best resources in this field is the Center for Interactive Programs, a division of the University of Wisconsin-Extension that develops and disseminates resource material on audio and video teleconferencing. The Center has a monthly newsletter, *TELCOMS*, and an annual conference. Contact Loren Parker, CIP, Lowell Hall, 610 Langdon St, Madison, WI 53703 or call (608) 262-4554. Another good source is the Program on Electronic Text for Higher Education, supported by the Annenberg/CPB Project. This Program is being conducted by San Diego State University, University of Wisconsin, University of Nebraska, and WGBH-TV who make up the Electronic Text Consortium. The Consortium produces a bimonthly newsletter and several reports.

SELECTION OF AN ELECTRONIC MAIL SYSTEM. . .

Selection of the appropriate electronic communications system can be difficult. With the number proliferating daily, the following check list may be helpful in selecting the right network for you. As a point of comparison, I am using the 18 major needs criteria we identified in our initial quest for TechCentral, AECT's new electronic network on GTE's Telemail carrier. Admittedly, other systems offer some features that GTE's Telemail does not and no system is perfect. You may need only a few of these features, but given the confusing and sometimes expensive nature of the communications medium, the more questions you can ask *before* getting captured in an unnecessary commitment, the better. Good luck!!!

Communications to the author should be addressed to Susan A. Tucker, Director of Contracts and Grants, Association of Educational Communications and Technology, 1126 Sixteenth St., NW, Washington, DC 20036, telephone 202/466-4780.

ELECTRONIC MAIL SYSTEMS FEATURE CHECKLIST

McDonnell-Douglas Classic OnTyme	**RCA** RCA Mail	**SERVICE SYSTEMS TECHNOLOGY** Comet Intl	**TELECOM CANADA** Envoy 100	**SOURCE** SOURCE Mail	**UNINET** World Link	**WESTERN UNION** EasyLink
yes (Classic)	yes (RCA Mail)	yes	yes	yes	yes	yes
yes (OnTyme Connection)	yes (RCA Mail PC)	yes	yes	yes	no	yes
yes	yes	yes	yes	yes	yes	yes
	yes	no	yes	yes	yes	yes
	yes	yes	yes	yes	yes	yes
yes	yes	no	yes	no	pending	no

104

FEATURES	GTE TELEMAIL TECHCENTRAL	COMPUSERVE InfoPlex EasyPlex	FEDERAL EXPRESS ZapMail	ITT Dialcom	MCI MCI Mail
– has timed delivery	yes	yes/no	no	yes	no
– has broadcast/distribution list	yes	yes/yes	yes		yes
– can scan mail	yes	yes/yes	no	yes	yes
– automatically informs user of new mail	yes	can set	yes	yes	yes
– gives summary of new mail	yes	yes/yes	no		
– has multiple commands on one line	yes	yes/yes	no	no	no
– has overnight hard-copy delivery anywhere in the United States (lets sender communicate with non-pc users)	yes	no/no pending	yes within 2 hrs	yes	yes specialty laser printed
– provides a listing of subscribers	yes	yes/yes	yes	yes	limited
– has online editing options	yes	yes/yes	yes	yes	yes
– is menu-driven	yes	EasyPlex	yes	yes	yes
– is command-driven	yes	InfoPlex	yes	yes	yes
2. TELEX INTERFACE	yes	yes/no	no		yes
– has inbound/outbound telex interface	yes	InfoPlex has outbound	no	yes	yes
– has interface with voice mailboxes (turns voice into data and data into voice messages)	yes		no	no	no
3. BULLETIN BOARDS	yes	yes/yes	no	yes	pending system offers help files
4. FILING MESSAGES	yes	yes/yes	no	yes	limited to 5 days
5. SPEED OF TRANSMISSION					
– 300 BAUD	yes	yes/yes	NA	yes	yes
– 1200 BAUD	yes	yes/yes		yes	yes
– 2400 BAUD	6 cities	6 cities			TYMNET
– other	no	up to 9600 on InfoPlex			
6. PREMIUM CHARGE FOR 1200 BAUD TRANSMISSION	no	yes/yes	NA	no	no extra at 2400 bps

McDonnell-Douglas Classic OnTyme	**RCA** RCA Mail	**SERVICE SYSTEMS TECHNOLOGY** Comet Intl	**TELECOM CANADA** Envoy 100	**SOURCE** SOURCE Mail	**UNINET** World Link	**WESTERN UNION** EasyLink
pending	yes	no	yes	no	yes	pending
yes	yes	yes	yes	yes	yes	yes
yes	yes	yes	yes	yes	yes	yes
yes	yes	yes	yes	can set	pending	no
	yes	yes	yes	yes	yes	yes
can set	yes		no	yes	no	yes
yes	no	no pending early '86	yes within 3 hrs	yes mailgram	yes mailgram cablegram niteletter	yes within 2 hrs telegram mailgram cablegram computletter
yes	yes	yes	yes	yes	ltd	yes
yes	yes	yes	yes	yes	yes	yes
yes	no	yes	no	yes	no	yes
yes	yes	yes	yes	yes	yes	yes
yes	yes specialty of RCA GlobeCom	yes	yes int'l but not in Canada	no	yes	yes specialty
yes	yes	outbound only	yes	no	gateway in November	yes
no pending	no	pending	pending	no	pending	no
yes	yes (RCA Mail only)	yes	offered thru INET	yes	yes	offered thru FYI News
yes	yes	yes	yes	5 days	yes	yes
yes	yes	yes	yes	yes	yes	yes
yes	yes	yes	yes	yes	yes	yes
yes	can offer access	depending on carrier	pending	6 cities	yes	yes
9600	w/OAS 90	9600 +			depending on host connect	4800
no	yes	no	no	yes	no	yes

FEATURES	GTE TELEMAIL TECHCENTRAL	COMPUSERVE InfoPlex EasyPlex	FEDERAL EXPRESS ZapMail	ITT Dialcom	MCI MCI Mail
7. SECURITY					
– has invisible password/no show	yes	yes/yes	no	yes	yes
– uses individual passwords within user account (private ID)	yes	InfoPlex	yes	yes	no
– user able to change his/her own password	yes	yes/yes	NA	yes	no
– encryption	yes	computer generated passwords	yes		yes
8. CUSTOMIZED FORMS GENERATION	yes	yes/no	no	limited	yes
9. EQUIPMENT COMPATIBILITY					
– interfaces diverse equipment and languages	yes	yes/yes	no requires ZapMail terminal	yes	yes
– requires standard phone line	yes	yes/yes		yes	yes
– requires RS-232C interface on your computer/terminal	yes	yes/yes		yes	yes
– requires asynchronous communications capabilities	yes	yes/yes		yes	yes
– uses half or full duplex	yes	yes/yes		yes	yes
– ASCII	yes	yes/yes		yes	yes
10. LOCATION INDEPENDENT					
– number of local access nodes nationally		500	zip codes: 8000	yes	64-MCI 550-TYMNET
– has many international access nodes	52 co.	42 co.	2 co.	specialty:	42 co.
– has WATS access available	yes	yes/no		yes +	yes +

McDonnell-Douglas Classic OnTyme	RCA RCA Mail	SERVICE SYSTEMS TECHNOLOGY Comet Intl	TELECOM CANADA Envoy 100	SOURCE SOURCE Mail	UNINET World Link	WESTERN UNION EasyLink
yes	yes	yes	brief show	yes	yes	NA
yes	yes	yes	yes	no	pending	no
yes	yes		yes	yes	yes	no
yes	no		yes	ltd	yes	no
yes specialty	yes	yes	yes	yes	yes	no
yes specialty	yes	yes	yes	yes	yes	yes
yes	yes	yes	yes	yes	yes	yes
yes	yes	yes	yes	yes	yes	yes
yes	yes	yes	yes	yes	yes	yes
yes	yes	yes	yes	yes	yes	yes
yes	yes	yes	yes	yes	yes	yes
550		yes	yes	yes	over 500	yes
65 +	52 co.	yes specialty	yes	52 co.	50 co.	yes
yes +	yes	yes	yes	yes	yes	yes

FEATURES	GTE TELEMAIL TECHCENTRAL	COMPUSERVE InfoPlex EasyPlex	FEDERAL EXPRESS ZapMail	ITT Dialcom	MCI MCI Mail
11. SYSTEM SUPPORT SERVICES	yes	yes/yes	NA		online help files
– has customer service hotline during working hours	yes	yes/yes		yes	yes (8am-9pm)
– has customer service hotline 24 hours	yes	EasyPlex		no	no Saturdays
– uses individualized user billing	yes	/yes		yes	yes
– offers customized design of system	yes	Interchange is package		yes	yes
– has materials design and production	yes	no/no		no	no
12. COMPLETE CONTROL OVER BULLETIN BOARDS BY 'ADMINISTRATIVE' USERS	yes	yes/yes	NA	yes	yes
13. CONNECT TIME RATES/CHARGES		InfoPlex negotiated EasyPlex:	.25/pg	if contracted $500 minimum $12.00/hr + if contracted $100 minimum $14.00/hr +	$1.00 per MCI ounce + per 7500 characters
– Prime time: 300 BAUD	$14.00/hr	12.50/hr +		$12 or $14/hr +	$0.00
– Prime time: 1200 BAUD	$14.00/hr (8am-6pm)	15.00/hr + weekdays			$0.00
– Off peak hours: 300 BAUD	$ 7.00/hr			after 6pm or	$0.00
– Off peak hours: 1200 BAUD	$ 7.00/hr			weekends, $6.50/hr +	$0.00
– Night hours: 300 BAUD	$ 4.00	6.00/hr +			$0.00
– Night hours: 1200 BAUD	$ 4.00	12.50/hr +			$0.00
		+ = extra carrier charges			+ = extra .15/min for 800 number

McDonnell-Douglas Classic OnTyme	RCA RCA Mail	SERVICE SYSTEMS TECHNOLOGY Comet Intl	TELECOM CANADA Envoy 100	SOURCE SOURCE Mail	UNINET World Link	WESTERN UNION EasyLink
NA	yes	yes	yes	yes	yes	yes
yes	yes	yes	yes	yes	yes	yes
yes	yes	yes	yes	no	yes	yes
yes	yes	yes	yes	yes	yes	yes
yes	yes	pkg	yes	yes	yes	yes
yes	no	yes	yes	yes	yes	yes
yes	yes	yes	yes	yes	yes	no
$3.00/hr includes TYMNET access ($.01/1000 character storage)					$1 to first addressee + .07 for each additional + $1.00/1000 characters	
	$14.00/hr	$30.00/hr	$.35/1000	$21.60/hr	only pay	$21.00/hr +
	$14.00/hr (Mail PC)	no extras for speed or carrier or time	characters + $.35 read once by recipient	$25.80/hr	when storing or sending	$30/hr + + = .20 for each address
	$ 4.00/hr		$.25/1000	$ 8.40/hr		save 40%
	$ 4.00/hr		characters +	$10.80/hr		

FEATURES	GTE TELEMAIL TECHCENTRAL	COMPUSERVE InfoPlex EasyPlex	FEDERAL EXPRESS ZapMail	ITT Dialcom	MCI MCI Mail
14. TELEPHONE ACCESS					
– via Telenet	yes	+.10/hr		yes	no
– via TYMNET	no	+.10/hr		yes	yes
– via UNINET	no	no		yes	no
– others	Datapac	CompuServe +.25/hr Datapac AlaskaNet		Dialnet	MCInet
15. CONNECT TIME ESTIMATES					
– monthly average	$ 31.98	NA	NA		
– monthly average as noted in 9/4/84 *Electronic Mail Microsystems Newsletter*				$23.60	$102.50
16. VOLUME CHARGE ESTIMATES	$ 36.96/yr	NA	NA	$ 0.00	NA
17. ANNUAL SUBSCRIPTION	$ 65.00	0.00		no/individual depends for corporate	no
– one-time set up fee/ intro kit	no	39.95	no		no
– has discounts for additional users with same institution or district	$35.00/ea.				yes
– requires monthly minimum/service charge/mailbox fee	yes/no	InfoPlex 10.00	rental for terminal		$18.00
18. GATEWAY CAPACITY WITH OTHER SERVICES					
– access to other EMAIL systems	yes	yes/no	NA	yes	yes
– access to commercial databases	yes	yes/yes	NA	yes	yes
– access to news databases	yes	yes/yes	NA	yes	yes
– access to private databases	yes	yes/yes	NA	yes	no
– access to public databases	yes	yes/yes	NA	yes	no

McDonnell-Douglas Classic OnTyme	RCA RCA Mail	SERVICE SYSTEMS TECHNOLOGY Comet Intl	TELECOM CANADA Envoy 100	SOURCE SOURCE Mail	UNINET World Link	WESTERN UNION EasyLink
no	yes	yes	no	yes	no	no
yes	no	no	no	no	no	yes
no	no	no	no	yes	yes	no
	RCA	DirectDial InfoNet	Datapac	SourceNet AlaskaNet Datapac		16 cities in own network
$ 50.19	NA	NA	NA	NA	NA	$34.89
$.25/1000 character (depends on account)	NA	NA	NA	NA	NA	NA
	0.00	0.00	0.00	0.00	0.00	$25.00
no	no	no	no	$49.95	no	no
yes	yes	yes	yes	yes	varies by customer	$1.50/other mailboxes
$500.00	yes RCA Mail-$140 Mail PC-$50	$10.00	$3.00/indiv $20.00/organization	$10.00	$2.00 per mailbox max $150.	$25.00 choice of mo. min or annual
yes	yes	pending	no	no	yes	yes
yes	yes	"	no	yes	yes	yes
yes	yes	"	no	yes	yes	yes
yes	yes	"	no	yes	yes	yes
yes	yes	"	no	yes	yes	yes

Diary of A Conversion Lotus 1-2-3 To Symphony 1.1

by Larry Dunnewin
GTE Midwestern Telephone Operations

Lotus 1-2-3 is a spreadsheet-graphics-database program created by Lotus Development Corporation. Symphony 1.01 is an integrated software package incorporating spreadsheet, word processing, graphics, database, and communications. Symphony 1.1 is a refinement and expansion of Symphony 1.01 providing memory efficiency, speed, ease of use, greater file compatibility and several new functions. Symphony 1.1 is available at retail outlets for $695. Registered Symphony 1.01 users should have received an upgrade mailer for a $75 upgrade kit. The customer support number for Symphony is (617) 253-9150.

INTRODUCTION

In early 1985 Lotus came out with the offer to upgrade from Lotus 1-2-3 to Symphony 1.01 for $200. I went for it. I had extensive experience with 1-2-3 and felt I would be a good test case for trying out Symphony in my department.

I kept a running commentary on what I liked, had trouble with, and disliked, in going from 1-2-3 to Symphony. At one point I decided not to use Symphony 1.01 due to some frustrations and problems. When Lotus came out with an upgraded version of Symphony 1.1 , I chose to try it again. I became a Symphony enthusiast and feel there is a definite advantage for many people in using Symphony.

INITIAL OBSERVATIONS

The first thing I noticed in changing from 1-2-3 to Symphony was the complex keystrokes for menus and services. A function in Symphony required different keystrokes than the same function in 1-2-3. I had to *forget* my memorized 1-2-3 menu keystrokes and follow Symphony's menus more closely.

The string functions in Symphony cause some of my 1-2-3 files to result in errors (ERR) when calculated. The Symphony spreadsheet requires modification before recalculation will work. The main problem is that Symphony does not allow a label as the numerical argument in logical formulas like @IF. In 1-2-3, the use of a label in the numerical argument acts as a zero and doesn't result in ERR. This led to the practice of putting a space in a cell to *zero it out* in 1-2-3. A space works just fine in a 1-2-3 spreadsheet but will cause an ERR to ripple-through Symphony spreadsheets and create difficulty in pin-pointing its origin for correction.

I experimented with the macro facility in Symphony. In the Symphony *learn* mode, macros are sometimes easier to create, but I couldn't get used to creating macros consuming a cell per keystroke. I did notice Symphony provides more powerful macros than 1-2-3. Some of the increased power is because of the greater number of commands for macros as well as my gradually increasing skill in creating them. Directly creating macros also uses far fewer cells than making them in the learn mode.

I found the graphics capability of Symphony very much like 1-2-3. The graph settings are expanded over 1-2-3 but the basic functions are the same. One expanded ability is the choice of hatching for each data element called *hue* by Symphony. I found the graphics window a nice way to search through many saved graphs in one spreadsheet. One drawback is that in line graphs, the lines can only be distinguished by different symbols on the lines. I prefer to use different line types like dots and dashes.

In my first attempts to use the word processing power of Symphony, I had a problem justifying paragraphs. Symphony ignores multiple spaces and puts just one space between words.

When I learned how to use named format lines and no justification where appropriate, I resolved the problem.

The copy block function in the document window is serial in that you cannot copy a column of info but only contiguous words. I guess I was expecting a spreadsheet like function and found Symphony is similar to most word processors.

When I first tried Symphony 1.01, there was not a spelling checker. Now one is available and I need it desperately. However, I am not entirely happy with the way it looks up words. Sometimes my spelling is too far off for it to find the word I'm trying to spell.

With the Symphony 1.01 version, every time I either exited to DOS via the DOS application, or just exited the program, it form fed the printer. I never did find out why I got a form feed, but I didn't get it when I used Symphony 1.1. With futher investigation, I might have found a problem in some part of the configuration of Symphony 1.01.

I made a note with Symphony 1.01 that just said, "Much more complicated than 1-2-3!" After learning and continuing on with Symphony 1.1, I realized the complexity was there, but it provided more power in the long run. I see the complexity as a hill to climb over, but there is a benefit on the other side if you don't give in too easily.

ABANDON 1.01

When Symphony 1.01 came out I was using a lap computer (HP 110) which had 1-2-3 built in. I would take 1-2-3 spreadsheets home on the HP 110. There is no way to put Symphony in the HP 110. Therefore, if I planned or thought I might be taking a spreadsheet home, I needed to do it with 1-2-3. I had difficulty continually switching back and forth between 1-2-3 and Symphony and finally decided Symphony 1.01 was not for me. Then Symphony 1.1 came out and allowed conversion of Symphony files back to 1-2-3 files. The macros created to work in Symphony 1.1 don't work in 1-2-3 but the spreadsheet is functional enough to use at home and bring back to work and use again in Symphony.

I received 1-2-3 spreadsheets from people re-

After learning and continuing on with Symphony 1.1, I realized the complexity was there, but it provided more power in the long run. I see the complexity as a hill to climb over, but there is a benefit on the other side if you don't give in too easily.

questing an input of information, and then return of the spreadsheet. I could not use Symphony 1.01 and return the spreadsheet to them for use on 1-2-3. Therefore, if they need more than just a printout of the information or if I improve or modify the spreadsheet, I have to use 1-2-3. This is a major reason I abandoned Symphony 1.01. Symphony 1.1 allows conversion back to 1-2-3 and I do not have to switch between using Symphony and 1-2-3. I can now load a 1-2-3 spreadsheet into Symphony 1.1 and work on it. When I'm done with the spreadsheet, I just convert it back to 1-2-3. Also with Symphony 1.1, I can use the Macro Library Manager. If I were to put macros in a spreadsheet in Symphony and convert it back to 1-2-3 the macros are invalid. The Macro Library Manager of Symphony 1.1 lets me use macro utilities to manipulate the spreadsheet. The macros are only in RAM and do not affect the actual spreadsheet and the conversion back to 1-2-3.

DISCOVER WINDOWS

Windows didn't really sink in at first. It took about a month of trying Symphony 1.1 and getting into the different environments until I started to get a grasp on windows. The windows in Symphony can't be synchronized in the same way you split the screen in 1-2-3. At first I thought not being able to synchronize windows was a problem. I soon discovered that with the availability of multiple windows and the ability to restrict the range of windows, I can split the screen as in 1-2-3 and even more.

There is great flexibility allowed by having an unlimited number of possible windows. For example, I have created a spreadsheet just for memos. Using a macro, I create a separate window for each memo and restrict each window to its own column (72 spaces wide). This allows me to name each memo with 18 characters and have many memos in memory for quick retrieval and modification.

At first I didn't realize that each window can have different widths for the same column. Also each window can have a restrict range associated with it and any row or column deletion or insertion will only affect the spreadsheet in that restricted range. I sometimes create a temporary window with a restricted range to perform an insertion or deletion of some rows or columns and then delete the window.

The power of windows can be realized when using the database function of Symphony. I show the entry form as one window, the database itself as another, and any lookup or edit tables as another. All those windows can be shown on the screen at the same time by adjusting their size and layout.

DATABASE ENVIRONMENT

The database environment in Symphony was the easiest part to learn. The major reason is I already use the spreadsheet and document environment daily and I'm comfortable using and manipulating those windows. Therefore, the transfer of the methods and menus of the spreadsheet and document environments to the database environment is an easy step.

A year ago I took a full eight hour class on using another software database. I didn't use it very often. I usually used 1-2-3 to perform a spreadsheet *database* function as I found it hard to remember all the steps of the other software. It was just easier to *get by* on 1-2-3. I now use the Symphony spreadsheet almost everyday and am very comfortable with the formulas, basic functions, and menu system it uses. The similarity of the database environment to the spreadsheet environment made learning and using the database very easy. The validity checks, edit checks, and formulas to control field entries of the database are the same as working on cells in the spreadsheet. The database is basically a spreadsheet where the rows are records and the columns are the different fields. It is very easy to use the entry form to look at the data or even use a spreadsheet window to directly look at or manipulate the database.

COMMUNICATIONS

I finally got around to trying the communications environment after using Symphony 1.1. I easily configured the settings to work as I required. The ability to choose which COM port to use was an advantage for me as I have two modems connected to my PC.

I have set up some login settings and find it easy to connect using the automatic login. I just connect to the remote and then let Symphony log me in. I did have a little difficulty determining the exact sequences required in the login send and receive. The documentation is not clear on how to set up for the automatic login. The difficult part is determining what your remote is sending and expecting to receive.

The communications environment only allows capture of the transmission in a range of the worksheet and/or the printer. If I am receiving a large report, it might cause problems as I can't capture directly to diskette. I haven't had any problem yet, but the potential is there.

CONCLUSIONS

Once I had expanded my use of Symphony 1.1 to include more than two environments, I realized the power of an integrated software package. I personally feel Lotus has created the best spreadsheet software in their 1-2-3 and Symphony packages. I know individual word

I know individual word processor, database, graph, and communication programs may provide fuller and deeper functionality, but the real power of Symphony lies in the fact that you use the same keystroke methods, formulas, and windowing techniques for all the separate functions.

processor, database, graph, and communication programs may provide fuller and deeper functionality, but the real power of Symphony lies in the fact that you use the same keystroke methods, formulas, and windowing techniques for all the separate functions. Some people argue that different functions using identical actions to produce different results is a drawback. I feel Symphony allows me the flexibility and ease to use all functions without the *relearning* or *rethinking* of how a separate program works or the time consuming task of changing diskettes and loading another program.

Symphony is not a program for the casual user, but there are many people who would benefit from learning Symphony. Someone who uses 1-2-3 for its spreadsheet capabilities but has not learned any database programs or dedicated word processor programs should learn Symphony. They could easily expand into the document, database, and communications provided by Symphony. Also, someone who has a good aptitude for computers and has just started using a PC would be a potential Symphony user, especially if they will be using the spreadsheet function frequently.

Symphony's full power is a veritable cornucopia of features and capabilities. Its full potential may remain dormant for many users, but even used partially, Symphony can provide a very powerful tool to increase your productivity, creativity, and flexibility.

Lotus 1-2-3 *and* Symphony *are trademarks of Lotus Development Corporation.*

Communications to the author should be addressed to Larry Dunnewin, GTE Midwestern Telephone Operations, P. O. Box 407, Westfield, IN 46074. (317) 896-6940.

SOFT

. . . The Quickest Way To Find The Microcomputer Software That Precisely Meets Your Needs

File SOFT is a database of microcomputer software specifications and descriptions. Using it, you can enter a wide variety of software requirements—such as Type of Application . . . Cost Range . . . Hardware Requirements . . . Operating System . . . and Producer Name.

Example: You want to find the names and specifications for "all integrated programs that combine word processing, creation and management of a database, plus spreadsheet analysis" and runs on a minimum of 256K on an IBM or IBM compatible micro. You also want the ratings (on a scale of Poor to Excellent) that various reviewers have given the programs that are found. Such a search would take 1 minute, 40 seconds and yield four hits that exactly meet the requirements: "INTUIT," "ELECTRIC DESK," "SMART SOFTWARE SYSTEM," AND "AURA."

File SOFT is mounted on BRS and contains records for over 5,000 micro software packages. The database is particularly popular with programmers, themselves, because of the wealth of data in the records and the many access points.

To use File SOFT, simply log on to BRS and type in SOFT as the file name. If you do not have a BRS password, write or call BRS, 1200 Route 7, Latham, NY, 12101, telephone 800-833-4707, in NY 800-553-5566.

THE IBM PC AS AN ONLINE SEARCH MACHINE PART 6: UPLOADING

by Stuart J. Kolner
Former Branch Librarian and
Associate Professor (Rockford)
University of Illinois at Chicago

INTRODUCTION

Although this series was to have been completed in five parts, reader requests have prompted this brief addendum. We shall discuss uploading, another searcher's tool made available by the advent of the inexpensive microcomputer. As before, we shall confine our discussion to applications on a time-tested system: the IBM Personal Computer, the Hayes 1200 Smartmodem (Hayes Microcomputer Products, Inc.), and CROSSTALK XVI communications software (Microstuf, Inc.).

WHAT IS UPLOADING?

"Uploading" is the transmission of information from local memory to a remote system. Taken broadly, this includes transmission of any pre-recorded information, whether that record exists in volatile memory, on floppy disk, hard disk, magnetic tape, paper tape, or any other storage medium. It is the exact opposite of "downloading," or the capture by local memory of information from a remote system. Ideally, the remote system would be a large mainframe serving many users at once: hence, the up/down polarity.

Transferral between systems of similar size or to an offline peripheral device is called "offloading." "Overloading" is what happens when too many definitions are given at once, so let us return immediately to uploading.

The above definition serves principally to distinguish this method of sending information from that with which we are all familiar: the hunt and peck method. Uploaded information speeds through the phone line at the same 1200 bits per second that incoming text arrives. Moreover, since transmissions would have been edited when originally entered, there are no time-consuming and potentially expensive typographical errors.

BENEFITS OF UPLOADING

Some general examples of information effectively transferred via uploading include:

1) Interlibrary loan requests between libraries
2) Articles to a publisher (used with this series to send manuscripts directly to Online, Inc.)
3) Memos and messages to other users via electronic mail systems such as TELEX and OnTyme II
4) Internal reports from a corporate branch to headquarters
5) Orders from field salespeople to corporate offices.

The same advantages that businesses find in uploading can lead the online searcher to ben-

117

efit from the technique. Most searchers will have encountered at least one of the following situations, and many meet similar problems daily:

1) The creation, rapid transmission, and reuse of "hedges," i.e., multi-term search statements describing frequently-used concepts
2) A search to be used against several databases or against the same database over several chronological subsets
3) A seach to be run daily or weekly in a rapidly-breaking field and, consequently, in a frequently-updated database
4) A "boiler-plate" search wherein a few terms must be altered but most are identical from one execution to the next
5) A "canned" search wherein the entire interaction can be programmed to execute automatically during low traffic (and low rate) periods such as evenings and weekends.

DISADVANTAGES OF UPLOADING

It is evident from the above list that not all searchers will find value in uploading. Uploading is very much a special-purpose feature, and thus dealt with here only as an appendix to the original five-part series.

The principal drawback of uploading is that the searcher tends to forfeit the interactive nature of online searching.

The principal drawback of uploading is that the searcher tends to forfeit the interactive nature of online searching. In the infancy of computer searching, specifically, in the early pioneering efforts by the National Library of Medicine, requests were transmitted and searched as "batches." The search strategy was pre-recorded. If a logical error or a poorly-selected index term was included, the requestor waited hours or even days for the aborted results to arrive. Narrowing a topic or trying alternate strategies was laborious at best.

Interactive online searching, when it arrived at last, was hailed as the perfect solution. The search process became dynamic, with strategy taking shape as the results of each query were instantaneously made known. Even then, back files (older portions of databases) were available only by batch access, which perpetuated the headaches of the earlier approach. Only relatively recently have all years of some large files been available online. Even now, these often exist as separate databases, requiring save/execute techniques and other "batch" tricks.

Thus, if uploading were used merely to batch-process searches, it would mean nothing more than a giant step backward.

Thus, if uploading were used merely to batch-process searches, it would mean nothing more than a giant step backward. Although there are many excellent applications for uploading, they will not be useful to all microcomputer searchers.

HOST SYSTEM FEATURES

Before deciding whether or not to employ uploading, explore the special features of your host system. It is possible that you can store search strategies economically on the remote system and invoke them conveniently from your end without uploading. The host's SDI service may be fast, frequent, and inexpensive enough to meet your goals. The host may also provide adequate cross-indexing and hedging (such as the BRS TERM database). In short, make sure that the goal you hope to accomplish by uploading can not be achieved more effectively with a service or technique already available at the host end.

TECHNICAL ASPECTS OF UPLOADING

For the sake of completeness, we should mention that there are several ways of transmitting information between computers. These are discussed in greater detail elsewhere in this series.

The two methods of interest to us here are ASCII transfers and block transfers. In ASCII transfers, information is sent from one computer to another in a continuous stream of data. Any line noise errors are received as deleted, inserted, or incorrect characters.

In block transfers, information is lumped together in blocks of data of specified size (e.g. 1024 bytes). Each block is sent as a unit, and special techniques are used to verify that the block received is identical to the block sent. If an error occurs, that block is sent again until it has been transferred without error. Examples of error-checking protocols are XMODEM and KERMIT; CROSSTALK provides its own protocol as well.

If the transmitted information is textual and is to be read by a person without intervening computer processing, a few minor errors can ►

be tolerated. They appear as typographical errors might, and ordinarily, the sense of the passage is readily understood. Thus, ASCII transfers are perfectly suited for electronic mail applications.

However, if the transmitted information is to be read by a computer, literal beasts that they are, a single error is one error too many, rendering the transferred information useless. In this case, a block transfer is the method of choice. Examples of information appropriate for block transfers include computer programs (uploaded to or downloaded from an electronic bulletin board, for example), and search requests uploaded to an online bibliographic system.

Unfortunately, online search systems, as they now operate, are set up to handle only ASCII communications. For this reason, our detailed examples below will involve ASCII transfers only.

Lengthy ASCII transfers at 1200 baud over voice-grade lines are apt to incur errors. This introduces a potential impediment for the uploader. Some expected time and cost savings may be lost in repeating transmissions which acquire errors in passage. Ideally, each major databank will one day provide a special port for dedicated use of microcomputer users. This would offer block transfer capabilities and other special features including flags and cues recognized by microcomputers.

UPLOADING WITH CROSSTALK

We have already seen that CROSSTALK is a capable and flexible communications system for online searching. That flexibility allows it to handle several types of uploading as well. CROSSTALK script files are particularly well-suited to the "canned" search and to unattended automatic operation.

We shall examine four examples of uploading using CROSSTALK. These will cover the spectrum of automation from searcher assistance with commonly-used terms, through the use of hedges and boiler-plate searching, all the way to the canned search.

FUNCTION KEYS

It would be easy to overlook the fact that CROSSTALK's function keys provide a small but very useful form of memory, available for uploading at the touch of a key.

Earlier in this series, we discussed ways in which function keys could assist with sign-on and other repetitive operations. The reader may wish to refer to earlier segments for more information on CROSSTALK programming techniques. As you remember, each command file stored in CROSSTALK contains 40 redefinable function keys, each capable of storing an alphanumeric character string. These may involve either commands to CROSSTALK itself, or more importantly here, brief text strings.

In order to demonstrate the usefulness of this "mini-uploading" using function keys, let us consider a hypothetical example. You work for a professional association and provide to members reprints from your official journal. Typically, search requests are based on a particular topic; here, we will use "cyclamates." You use the BRS system to search the journal from a database containing thousands of others as well as your own, the Journal of the Society of Redundancy Society.

You could program a function key as follows at CROSSTALK's COMMAND? prompt:

```
FK 8 AND JOURNAL-OF-THE-SOCIETY-OF-REDUNDANCY-
SOCIETY.SO.!
```

Thereafter, each time you have occasion to search on a particular subject, proceed as follows:

```
5 _ :   4 AND CYCLAMATES
6 _ :   181 DOCUMENTS
7 _ :   6 (then press function key 8)
```

Thus, the touch of a single key supplies the proper Boolean operator, journal name, field delimiter, and carriage return.

Most searchers can bring to mind many similar time-savers for each databank/database they use. An important feature of CROSSTALK is that *each command file* provides 40 such programmable keys. The searcher can create as many command files as his disk capacity allows. Theoretically, one could create a separate command file for each databank/database combination searched, each with a fully automated sign-on procedure and 40 specially-programmed hedge keys.

Remember that function key assignments can be reviewed at any time from CROSSTALK's command mode with the FK command.

HEDGES

Within specialized organizations, online services repeatedly require the use of specific sets of terms in order to limit searches appropriately. Also, certain databases, especially those with only loosely controlled vocabulary, require large sets of terms and/or words in order to define concepts for comprehensive retrieval. Such sets of terms are called "hedges."

Once again, a specific example best illustrates the general application of uploading. Consider, for instance, a health funding agency which works with various industries, associations, and needy groups, but always and only with reference to psychology. The agency's concern includes virtually every disease and disability, but it is only interested in the psychological impact of the disease on the patient, the family, health care workers, and society in general.

One particular database offers some limited means of directly addressing "psychological aspects of . . .," but it is inadequate and does not provide complete retrieval. A hedge is clearly required.

The searcher decides that the following list of terms best describes "psychological aspects of . . ." for this particular database (? is a truncation symbol):

psychological
psychiatric
behavior behavioral behaviorally
retarded retardation
mental disorder?
mental dysfunction?

Using a word processor in the non-document or ASCII mode, the searcher creates a file called PSYCH.HDG as follows (typed in a string with no carriage returns):

```
PSYCHOLOGY OR PSYCHOLOGICAL OR PSYCHIATRIC OR
BEHAVIOR OR BEHAVIORAL OR BEHAVIORALLY OR RETARDED
OR RETARDATION OR (MENTAL ADJ (DISORDER? OR
DYSFUNCTION?))
```

This file would then be stored on the same disk with CROSSTALK command and script files.

The following is an example of a search into which this hedge could be integrated:

```
1 _ :  KIDNEY-DISEASE
          3122 DOCUMENTS
2 _ :  DIALYSIS
          259 DOCUMENTS
3 _ :  1 AND 2
          175 DOCUMENTS
4 _ :
```

At this point, the searcher would press the Esc Key to switch to the CROSSTALK command mode, and issue this command:

```
SE A:PSYCH.HDG
```

This causes an ASCII transfer of the contents of that file on drive A: to be transmitted at the full telecommunications rate (probably 1200 baud). After the hedge has been sent, the carriage return must be pressed.

This hedge can be automated further by programming a function key as follows:

```
FK 7@ SE A: PSYCH.HDG !
```

Thus, pressing function key 7 at any point in the search would send the hedge in the same way. "@" distinguishes a CROSSTALK command from a character string.

Since each hedge exists as a separate file, disk memory size is the only limit to their number.

BOILER PLATES AND CANNED SEARCHES

A canned search is one designed to be executed automatically by CROSSTALK. The boiler plate search is simply a canned search with interchangeable parts. Both of these require that the entire dialogue of the search transaction, not only the searcher's parts, but also the host computer's replies, must be known ahead of time. This enables the microcomputer to pick up its cues and respond properly without operator assistance.

Let us consider, for example, an attorney who routinely searches for patents awarded to a list of corporations, but only within certain subject areas and time periods. A typical search might look like this:

```
(CR)(CR)
READY:
ID4032 (CR)
PASSWORD:
SECRET (CR)
DATAFILE:
PATENTS (CR)
SS 1?       METALLURGIC-FURNACES (CR)
            1   4922
SS 2?       AMERICAN-METALS-INC/CO (CR)
            2   50216
SS 3?       1 AND 2 (CR)
            3   253
SS 4?       3 AND YR 1926/DT (CR)
            4   13
SS 5?       FORGES-UNLIMITED/CO (CR)
            5   7932
SS 6?       1 AND 5 (CR)
            6   71
SS 7?       6 AND YR 1958/DT (CR)
            7   12
SS 8?       FIREX-CORP/CO (CR)
            8   1333
SS 9?       1 AND 8 (CR)
            9   47
SS 10?      9 AND YR 1965/DT (CR)
            10   5
SS 11?      4 OR 7 OR 10 (CR)
            11   30
SS 12?      PRT (CR)
            (LIST OF CITATIONS)
READY:
LOGOFF (CR)
THANK YOU
            12:13
            $85.55
OFF 12/3/85 1:13:12
GOODBYE
```

The first step in automating this search is to create a script file under a useful name (e.g. SEARCH.XTS), using a word processor or text editor in the non-document, or ASCII, mode. This also includes the sign-on (assume no sign-on script file exists):

```
LOAD DATABANK
WAIT QUIET 20
```

►

```
REPLY !
WAIT STRING ":"
REPLY ID4032 !
WAIT STRING ":"
REPLY SECRET !
WAIT STRING ":"
REPLY PATENTS !
WAIT STRING "?"
REPLY METALLURGIC-FURNACES !
WAIT STRING "?"
REPLY AMERICAN-METALS-INC/CO !
WAIT STRING "?"
REPLY 1 AND 2 !
WAIT STRING "?"
REPLY 3 AND YR 1926/DT !
WAIT STRING "?"
REPLY FORGES-UNLIMITED/CO !
WAIT STRING "?"
REPLY 1 AND 5 !
WAIT STRING "?"
REPLY 6 AND YR 1958/DT !
WAIT STRING "?"
REPLY FIREX-CORP/CO !
WAIT STRING "?"
REPLY 1 AND 8 !
WAIT STRING "?"
REPLY 9 AND YR 1965/DT !
WAIT STRING "?"
REPLY 4 OR 7 OR 10 !
WAIT STRING "?"
REPLY PRT !
WAIT STRING "READY:"
REPLY LOGOFF !
WAIT STRING "GOODBYE"
BYE
```

The "LOAD DATABANK" command loads the proper communication parameters for the DATABANK. "WAIT QUIET 20" delays the next command until the line has been quiet in both directions for 2 seconds.

To execute, simply enter the CROSSTALK command mode and type:

```
DO SEARCH.XTS
```

Although cumbersome to program, the strategy may then be used relatively effortlessly whenever needed. The main topic, in this case metallurgic furnaces with corporate names and dates, may be replaced easily with the word processor. Naturally, other word processor short-cuts can be brought to bear in other ways (e.g. repeating the phrase 'WAIT STRING"?"' using block copy and move routines).

To run the search at a specified time, insert the following at the beginning of the script file:

```
WAIT UNTIL XX:XX
```

(time of day, e.g., 04:30 for 4:30 a.m.)

The attorney could execute this file when he leaves for the day, and find the results waiting when he arrives the next morning. All CROSSTALK options for capturing and/or printing are available here; see earlier parts of this series for more information.

Note that CROSSTALK's cues ("?", "READY:", etc.) do not involve numbers of postings, so that the search will run regardless of the number of citations reported by the host system. A "NO POSTINGS" message will not derail the search, provided that the system's key responses are delivered as expected. This confirms the usefulness of flags like the "?" and ":" in system replies: they help the microcomputer carry out a meaningful dialogue by interpreting system responses.

This also underscores the usefulness of having non-ambiguous responses built into the host system. For example, it is far better to be able to tell CROSSTALK to look for "READY:" after citations are printed than to tell it to look for ":", a character sure to come up in the first few citations. This would stop the automatic search. The ideal host system for microcomputers would utilize a separate and unusual character or string for each different user cue.

CROSSTALK's script file processor is capable of limited decision making based on conditional programming steps. This capability allows the searcher to build enough intelligence into the script file to handle error messages from the host system.

CONCLUSION

Although uploading is not for everyone and many will find it too cumbersome for their daily routine, it may provide enormous help in a few special situations. For those who do find advantage in the technique, I hope that this discussion has proven sufficiently uplifting for uploading.

THE AUTHOR

STUART J. KOLNER received his BS in Biology from the College of William and Mary, Williamsburg, VA, and his MSLS from Case Western Reserve University, Cleveland, OH. He recently resigned his position as Branch Librarian and Associate Professor (Rockford) and enrolled at the University of Illinois College of Medicine. The first five parts of this series, "The IBM as an Online Search Machine," earned him the 1985 Data Courier Award, given annually for excellence in writing for either *ONLINE* or *DATABASE* magazine.

Communications to the author should be addressed to Stuart J. Kolner, 712 Ellis Avenue, Rockford, IL 61103; 815/962-0172.

THE IBM PC AS AN ONLINE SEARCH MACHINE

PART 5: SEARCHING THROUGH CROSSTALK

by Stuart J. Kolner
Branch Librarian (Rockford) and
Associate Professor
Library of the Health Sciences
University of Illinois at Chicago

INTRODUCTION

The aim of the series *The IBM PC as an Online Search Machine* has been to chart a course through the chaos that surrounds telecommunications in a vehicle which has been thoroughly tested and proven sea-worthy: the IBM PC.

Up to this point, the series has been concerned with the design and construction of that vehicle. This article, the last in the series, will describe its use.

A BRIEF REVIEW

The device we have described is an IBM PC with 256 kilobytes (KB) of main memory, 2-360 KB floppy disk drives, a Hayes 1200 Smartmodem, a monitor, printer, and the necesary adapter boards. The system has been purchased, assembled, and tested.

Our online search machine uses CROSSTALK XVI (MicroStuf, Inc.) as its communications software, operating under PC DOS 2.0 (or 2.1). CROSSTALK has been installed to operate with this particular modem. Command files have been stored which automatically set up the correct communications parameters for the appropriate databanks, including the telephone number, baud rate, duplex, and so forth.

Let us now walk through the entire process of running a search with this system, illustrating its advantages and unique powers along the way.

THE SEARCH PROCESS

Make sure that your modem is on and properly connected. Place the CROSSTALK master disk into drive A (the left-hand drive), and boot the system. This can be done by turning on the power if the system is off, or by holding down the CTRL and ALT keys and pressing the DEL key. Your AUTOEXEC.BAT file, if you created one, will load CROSSTALK automatically; otherwise, the disk operating system will load and leave you with the **A >** prompt. Type **XTALK** and press the enter key.

After the CROSSTALK logo screen and the "funny saying" have disappeared, the status screen will appear. At the bottom is the numbered menu of command files you created earlier, and the request, **Enter number for file to use:**. Type the number for the databank you have selected and press the enter key.

MAKING THE CONNECTION

The screen for the command file you selected will be displayed, and the modem will click on. You should hear a dial tone for a few seconds, and then the number being dialed in the fashion specified: beeps for touch tones, and an erratic series of clicks for pulse dialing. The OH (off hook) modem light should come on if you are using an external modem, indicating that the modem line is open. If the OH light comes on but you do not hear the tones, don't panic—your volume control probably hasn't been turned up. Find the white plastic volume knob on the back of the modem and give it half a turn clockwise. This should give a reasonable volume for office operations. If the OH light does not illuminate, try setting the Parity to either Even or Odd rather than None (see the previous article or your CROSSTALK manual for instructions).

The status line at the bottom of the CROSSTALK screen will tell you what is happening. It should say **Dialing 123-4567 – waiting for connection**. You will hear the telephone line so you know when it is ringing, whether it is answered or busy, and so on. When a connection is made, you will hear your modem "handshake" with the modem at the other end of the line; that is, they send each other tentative tones to identify their baud rates. If they are compatible, a connection is made and the telephone speaker is turned off to spare you the shrill and annoying details of their electronic coupling.

There are several reasons why a connection might not be made. The line at the other end might not be answered. This happens sometimes when the data communications network (e.g., TELENET) is not functioning properly, usually due to a problem in your local node. You can wait a while and try again, or call the network if the problem is persistent. A busy signal might also indicate this sort of problem, or it might result from unusually high traffic on the lines. If the call is answered, a tone will sound. If the tone is not matched by your computer and the speaker is turned off, one of two problems is probably the cause: either you have dialed into a port operating at a different baud rate than the one you have set in CROSSTALK, or your modem is having an electronic "snit." In the latter case, you will hear the line answered, the tones generated, but the speaker never shuts off. The only way out of this is to reach around behind your modem, shut it off, wait a few seconds, turn it back on, and try the number again.

CROSSTALK will continue to wait for a certain interval for a number which does not answer or which is busy, after which time it hangs up and reports.

CROSSTALK will continue to wait for a certain interval for a number which does not answer or which is busy, after which time it hangs up and reports. The user is given the option of re-dialing every few seconds. The command file can be set up to re-dial automatically after a certain number of seconds, to wait a different interval before hanging up, and so forth; details will be provided below.

When a connection is made, the CROSSTALK status line reports **Connection established. Proceed**. The status screen is replaced with a blank screen to continue the transaction.

At any point in the dialing sequence, the process can be interrupted by pressing the ESC key. Pressing this key once or twice always results in the display of the **Command?** prompt in the status line at the bottom of the screen, allowing you to send commands directly to the CROSSTALK software. Pressing the enter key after this prompt will cause the telephone number to be dialed again; the command **GO** accomplishes the same thing.

The GO command can be set with other parameters such as the re-dialing delays mentioned above. The format for these additional ►

parameters is as follows:

GO R60/90

The **R** tells CROSSTALK to sound an alarm (a series of three beeps) if and when the connection is made. A **Q** instead would silence the alarm. The first number, 60 in this case, tells CROSSTALK to re-dial the number every 60 seconds until a connection is made. The second number, 90 here, tells the system to wait 90 seconds for the connection to be established before abandoning the call and trying again.

SWITCHING BETWEEN SCREENS AND MODES

The top of the monitor screen indicates whether you are looking at the status screen or the online transaction screen. The status line at the bottom of the screen indicates whether you are in the command mode (the **Command?** prompt will be displayed), or the terminal mode (the online transaction status line will be displayed).

Whenever the **Command?** prompt is displayed at the bottom of the screen, anything typed will be sent to the CROSSTALK software rather than to an online host. If you do not wish to address CROSSTALK, press the enter key to return to terminal mode.

Pressing the HOME key switches between the status screen for the loaded command file and the online transaction screen. This key can be pressed at any time during a search to check parameter settings. If you wish to change any of the settings, you can do so from either screen by pressing the ESC key to get the **Command?** prompt and then entering the new parameter(s) as discussed in our last article. Press the enter key and you will return to the online transaction. Note that the HOME key and the ESC key work independently of one another; either can be activated at any point.

THE ONLINE TRANSACTION

The online transaction status line looks like this:

Esc for ATtention, Home to SWitch: : Capture Off : : On: 00:00:00

The first set of messages is a reminder that the ESC key gets CROSSTALK's "attention" and prepares it to receive a command, and that the HOME key switches between status and online transaction screens.

The status of the capture buffer is indicated next; color monitors offer a different color status line as a visual signal when the capture buffer is on, and a blinking status line when the buffer is almost full. When the buffer is on, CROSSTALK also shows the amount of remaining memory.

The final segment of the line displays a timer, a very useful reminder of how long you have been online.

The online status line remains at the bottom of the screen throughout each transaction. While it is displayed, anything typed on the keyboard will be sent over the phone line to the answering computer rather than to CROSSTALK.

From this point on, the search can be conducted exactly as if the user were at the keyboard of a "dumb" terminal. All of the keys function accordingly; for example, CTRL-H will send a backspace, CTRL-J will send a line feed, and so forth.

You will notice that there is a key labeled "Break" in the upper right-hand corner. The word "Break" is on the front of the key rather than the top. This is not the same as the break key used in searching. Instead, this key interrupts the processing of a program when it is pressed in conjunction with the CTRL key. To send a break in searching, use the END key on the lower left of the number key cluster.

CAPTURE BUFFER CONTROLS

The capture buffer allows you to capture data in the computer's memory. It can be toggled on and off at any point during the search.

You can also set the command file to have the capture buffer on or off when it loads. Having it load in the off position will allow you to turn it on during the search and capture only the information you want to preserve. For example, having it off initially means that the sign-on process and your passwords will not be captured and will, therefore, not be displayed on the printout. If it is important for security reasons that no one discovers your passwords, the buffer could be turned on to capture just the search strategy or just the list of retrieved citations.

If the buffer is turned on, then off, and then on again, new information is appended to that already captured.

Many searchers find, however, that it is difficult to remember to turn the buffer on at the right moment. Failure to do so means that the information on the screen may be lost once it has scrolled off. (If this should happen to you, see the CROSSTALK manual for the retro-capture buffer option which may help you save the information even if it has scrolled off). For this reason, many searchers prefer to let the file load with the buffer on. We will discuss later how to remove unwanted information from the saved search, and also a way to erase the passwords automatically once they have been entered.

If you try to capture more data than your

memory can contain, the system first issues a warning and then shuts off the buffer when full. As soon as CROSSTALK issues the memory full warning, you need to save the data and provide more room.

The act of writing the buffer to disk clears the buffer and prepares it to receive more data. Since you can write the buffer to disk even while it is receiving data, it is virtually impossible to lose data through capacity limitations.

CAPTURING DIRECTLY TO DISK

Another way to capture data is to write it directly to a disk file as it is received. This is especially useful if you have a small main memory that might fill up before your search has been completed. It is also recommended if your environment is prone to power problems; whatever is in the memory when the power fails will be lost, but information stored on a disk will still be there when the computer restarts. CROSSTALK provides for the option with this command:

CA FILENAME

Given at a **Command?** prompt, this command begins the capture directly to disk. The system still uses the capture buffer, but whenever it receives approximately 1000 characters, it writes the contents to disk. If the disk fills up, you will see a warning message; CROSSTALK then begins storing information in the remaining memory.

PRINTER CONTROLS

The printer can be either on or off during the actual search. There are two options for simultaneous printing during a search.

The first and simplest approach is to direct the output to the printer at the beginning of the search. This can be accomplished either by issuing the CROSSTALK PRint command from the keyboard or by setting up the command file to have the printer turn on automatically when the file is loaded.

It should be pointed out that, even though the search transaction, and thus the screen display, may proceed at 1200 baud, most parallel printers in use with microcomputers are slower than that. Many dot matrix printers operate in the 800 baud range, or about 80 characters per second. Moreover, printer speeds can vary with the quality of the typeface selected. How can a slow printer be made to work with a fast modem?

CROSSTALK solves the problem by controlling the rate of transmission of the incoming information; in this way the printer can keep up with the output. It does this by receiving one line at a time at 1200 baud, stopping the transmission momentarily until the printer can reproduce that line, and then going on to accept the next line. Although this results in a slightly erratic screen display, it works rather well.

The second method, which utilizes a print spooler or buffer, circumvents the erratic display problem by allowing the screen and the printer to operate independently at their own rates. Of course, you must first have a program that will establish a print spooler in your main memory. Several public domain packages are available which work quite well, and many board manufacturers offer excellent spoolers which work whether the board is present or not (e.g., SUPERSPOOL, by AST Research Inc., Irvine, California).

The spooler is a section of the main memory set aside to handle information being sent to the printer. Because it is solid state, it can receive the information and assimilate it much faster than the printer can. It then feeds it to the printer at the proper rate and turns the computer back over to you for other purposes. The spooler may be set up before CROSSTALK is loaded, or it may be invoked from the CROSSTALK command mode using the **RUN** command (see your CROSSTALK manual).

DISCONNECTING

When you are finished with the search and have signed off with the databank, you have several options for disconnecting. The **QUit** command hangs up the phone and exits CROSSTALK; if there is anything in the capture buffer, you will be asked first if you wish to save it and be given the opportunity to create a disk file to hold the buffer's contents. The **BYe** command simply hangs up the phone and returns you to CROSSTALK command mode, leaving the buffer contents as they are. Each of these commands can be entered from the CROSSTALK command mode at any point, even before you have signed off. It is a quick way to exit from a slow or frozen databank.

USING THE CONTENTS OF THE CAPTURE BUFFER

The contents of the capture buffer will remain as they are until you either erase them, write them to a disk file, or choose to abandon them upon returning to the operating system.

You have several options in dealing with the material saved in the capture buffer. The **WRite** command stores the buffer's contents in a disk file:

WR FILENAME

This creates a file named FILENAME and stores the buffer contents therein; it also erases the capture buffer.

You can review the entire contents of the ►

buffer by issuing the **TYpe** command. **TYpe #** displays the buffer contents with assigned line numbers, and **TYpe 25** would show the buffer beginning with line number 25.

The **CS** (capture status) command displays information about the buffer: the number of lines contained therein, the number of KB of information, what percentage of the buffer is full, and the number of bytes free on the disk. It also provides a means of searching the buffer for any alpha-numeric string.

CS acupuncture

would search and find every occurrence of the word "acupuncture" in the buffer. The case (upper or lower) doesn't matter. Starting at the beginning of the buffer, it will stop and highlight each occurrence, while displaying the 5 lines surrounding the word.

The buffer contents can be printed by first turning on the printer (use the **PR ON** command), and then issuing the **TY**pe command. The contents will be displayed on the screen and echoed on the printer.

The **ERase** command, when no file name is specified, will erase the contents of the capture buffer. CROSSTALK first asks you **Really erase buffer? Press Y or N:**, acknowledging that this is a significant act on your part.

COPING WITH THE OPTIONS

It may appear difficult, in light of all of these options, to select the best approach in online searching. The best approach is the one that fits your particular needs and searching style, and can be determined only through experimentation. However, three years of experience searching through CROSSTALK lead me to venture a few suggestions:

- Unless you are plagued with power problems (brown-outs, blackouts, surges, and so forth), and unless you have a machine with less than 128KB of memory, have your command files set up with the buffer on.
- In order to streamline the process, do not print anything during the search session.
- If you need to refer to a statement that has scrolled off the screen, use the **TYpe** command for a quick review of the buffer. If you prefer, you can make use of the databank's command to review the strategy thus far (e.g., **DISPLAY SETS**).

When you are finished with the search, sign off and disconnect using the **BYe** command. Then, either print the file from the buffer as described above, or use any ASCII text editor or word processor (e.g., WordStar) to edit the search results and produce a neat and enhanced original. By delaying printing until you are no longer connected (and no longer paying databank and telecommunications charges), you will have the opportunity to produce an excellent and attractive printout. This kind of processing of search output will be discussed later.

AUTOMATING THE PROCESS FURTHER

As far as data capture capabilities are concerned, the foregoing illustrates clear advantages of the microcomputer over the dumb terminal. But what about other tedious and repetitive aspects of the searching process such as the sign-on?

CROSSTALK offers at least two ways of automating the sign-on process or any other mechanical portion of the search transaction. Redefinable function keys provide an intermediate step toward total search automation, and the use of CROSSTALK script files takes you the rest of the way.

THE FUNCTION KEYS

As you remember from our first article, the IBM PC keyboard has 10 function keys on the left side. These may be redefined through the software to represent virtually any command or alpha-numeric "string" (that is, a series of letters, numbers, or special characters). When used alone and in conjunction with the shift key, the CTRL key, and the ALT key, they provide a total of 40 user-defined options which can be invoked with no more than two keystrokes.

CROSSTALK includes a mechanism for redefining these 40 key combinations. The keys can be set to send strings or commands to the online host or directly to the CROSSTALK software.

The function key definitions are part of each command file and are loaded whenever that file is loaded. A list of function key assignments can be obtained by typing **FK** at the **Command?** prompt. Typing **FK S**, **FK C**, and **FK A** displays the settings for the shift, control, and alternate function keys respectively.

To set a function key, use the **FK** command:

FK 1 string: sets function key F1 to type "string" when pressed
FK s1 string: sets shift-F1 to type "string" when pressed
FK c1 string: sets Ctrl-F1 to type "string" when pressed
FK a1 string: sets Alt-F1 to type "string" when pressed

Special characters exist to make this more useful: "`!`" sends a carriage return; "`~`" causes a delay of a couple of seconds; "`^`" precedes a control character (if your host system uses

these); and "@", if placed before a command, sends that command to CROSSTALK rather than to the online host. Be sure to save the command file again if function key reassignments have been made.

To illustrate how these are used to automate the search process, let us look at an example. Suppose you use databank ABC via TELENET, and your password is AB12. Load your ABC command file and make this assignment to function key F1:

```
FK 1 ! ! !  C ABC ! - -  AB12 !
```

Whenever F1 is pressed, three carriage returns will be sent to TELENET, then the connect command for the ABC system followed by a carriage return, then, after a four second delay, the proper password will be sent, followed by a carriage return. Thus, the entire sign-on is stored and invoked with a single keystroke each time the system is dialed.

Similarly, other host system commands could be assigned to other function keys: F2 could be the command to load the most heavily-used database; F3 could be the command to print bibliographic citations; and F4 could be the log-off command string. If F5 were programmed this way,

```
FK 5 @BY !
```

then a single keystroke would hang up the phone. Note the @ preceding the command; this directs the command to CROSSTALK instead of the databank.

F6 could prepare a printout:

```
FK 6 @PR ON ! @TY !
```

This would set F6 so that it turned on the printer and caused the capture buffer contents to be displayed on the screen and echoed to the printer.

Thus, the reassignable function keys remove some of the mechanical typing chores from the searcher. They may be tailored for each databank, stored, and called up whenever the appropriate command file is loaded.

As an aid in keeping track of the values you have assigned with each command file, you can purchase blank keyboard overlays for the 10 function keys. These are erasable and reusable. Keep one handy for each databank you use, and snap it over the keys when you begin a search. These are called QWIK-KEYs, and packs of three are available for about $7 from Power Up, a division of Software Publishing Corporation, P. O. Box 306, Half Moon Bay, CA 94019, Tel. 800-851-2917 (in California, 800-223-1479).

SCRIPT FILES

The ultimate in automated searching operations is available through the use of script files. These are so named because they represent lists of commands which CROSSTALK follows in sequence, much like an actor follows a script. The entire sign-on routine can be stored in a script file which is invoked automatically each time a particular databank is chosen from the command file menu. Script files can also handle dialing operations, file uploading and downloading, communications between PC's, and many other functions.

Script files can be created through any standard word processor or text editor. Special commands are available which facilitate your control over the operation of CROSSTALK. Some of these will be used in the following illustration, but read the CROSSTALK manual section on script files to gain a complete understanding.

Let us take as an example the same sign-on used above. Assume the command file is called ABC.XTK. Using a word processor (in the non-document, or ASCII, mode), you could create a file called ABC.XTS. Using the same file name with the .XTS suffix means that it will be executed automatically whenever the corresponding .XTK file is loaded. Here is the file:

```
reply ! ! !
wait string "@"
reply c ABC !
wait string "MMMMMMMMM"
reply AB12 !
```

Note that there are two "wait string" statements – these tell CROSSTALK to wait until a certain response from the host has been received before going on to the next step. The first is the "@" TELENET prompt, and the second is the last series of characters in the ABC password grid. This means that all of the elements of the transaction must be known in order to create the script file – not only your reply but the system's prompts as well.

Other ways of timing responses allow a delay of a certain interval, or a delay until the phone line is quiet for a certain interval (i.e., no traffic in either direction). This last method is particularly useful in dealing with the idiosyncrasies of some systems; for example, the three rapid carriage returns sent by CROSSTALK at the outset of this transaction may or may not be accepted by TELENET. Occasionally a delay is needed between the first two and the last carriage return. A better way to phrase the script file is:

```
reply ! !
wait quiet 5
reply ! !
wait quiet 5
reply c ABC !
wait string "MMMMMMMMM"
reply AB12 !
```

►

This can be customized further to accommodate a second security password, to remove the passwords from both the screen and the capture buffer, and to load the most frequently used database:

```
reply ! !
wait quiet 5
reply !
wait quiet 5
reply c ABC !
wait string "MMMMMMMMM"
reply AB12 !
wait string "2"
clear
wait string ":"
reply SECRET !
wait string "T"
clear
er
wait string "_:"
reply !
wait string "_:"
reply MESH !
```

This file, called ABCMESH.XTS, goes along with a command file called ABCMESH.XTK. Its purpose is to sign on to ABC and load the **MEDLINE** database. The sign-on proceeds as before up to the eighth line: "wait string "2" " tells CROSSTALK to execute the next line as soon as the "2" at the end of the password has been sent. The effect of this is to erase the screen the instant the password is delivered. Thus, if someone is sitting and looking over your shoulder as you sign on, the password will not be discovered. The same operation takes place immediately after the security word SECRET is sent. The "er" command tells CROSSTALK to erase the buffer so that the foregoing sign-on will be eradicated. Nothing captured after that command will be affected.

The effect of this is to erase the screen the instant the password is delivered. Thus, if someone is sitting and looking over your shoulder as you sign on, the password will not be discovered.

The last four lines conduct the necessary transaction to load the MEDLINE file. Thus, with one key stroke to select ABCMESH from the command file menu, the computer automatically takes care of the details and deposits the searcher at the first search statement prompt in MEDLINE.

A script file can be as long as needed. It can include a search strategy to be uploaded or some other string of commands to be sent to an online host. For example, I have a command/script file combination that dials the OnTyme II electronic mail system, signs on, checks for any messages waiting, prints them, and signs off. This entire process is invoked by a single keystroke to select ONTYMCHK from my command file menu.

The list of available script file commands includes a "wait until" function that watches the computer's clock until a certain time to execute the next step. This allows certain unassisted operations. For example, here is a file that could be used to transfer interlibrary loan files automatically between libraries:

```
wait until 8:15
go
wait string "Ready."
xm a:topfromr.dta a:
wait quiet 30
rq a:torfromp.dta a:
wait quiet 30
reply ILL file transfers complete.
wait quiet 30
bye
```

This file watches the clock until 8:15 a.m., and then executes the loaded command file to dial a library in Peoria (the **GO** command). It then transmits a file called TOPFROMR.DTA, and requests a file called TORFROMP.DTA. It then sends a message that the file transfers have been accomplished, and hangs up.

These few examples only begin to illustrate the time and labor-saving short-cuts possible with script files. For more sophisticated applications, the programmer may employ conditional steps, loops, and a variety of other programming conventions. See your CROSSTALK manual for complete details.

After using script files to access your databanks, you will soon find that you can no longer remember your passwords, much less the various sign-on routines for each. This is a welcome luxury; you can focus on search strategy and let the computer handle the "paper-work."

PROCESSING DOWNLOADED INFORMATION

If you save your searches as disk files before printing them, you have the opportunity to perform a variety of editing operations to produce a superior printout. This can be done with WordStar or any ASCII text editor.

WordStar automatically assigns page numbers to files loaded through its document mode. These can be placed anywhere on the bottom of the page or included in the page. We usually assign a brief page heading which describes the search and includes the user's name.

You can also change the margins, delete or add lines, and re-format the appearance of the page.

One caution: some downloaded lines of text may be missing line feeds—these can be identified in WordStar because the line shows a "-" (hyphen) in the right hand margin. Be careful NOT to delete any such line; you will not only delete the line indicated, but the next line as well. One way to solve this problem is by placing the cursor to the right of the last word on such a line, using ^ T to delete everything to the right, and inserting a carriage return.

The word processor allows you to merge several database searches into a single report, re-sort the citations, remove duplicates or false drops, re-number the citations, and perform a whole variety of other enhancing operations.

The word processor allows you to merge several database searches into a single report, re-sort the citations, remove duplicates or false drops, re-number the citations, and perform a whole variety of other enhancing operations. I would like to mention a couple of methods to enrich the search with advanced word processing capabilities.

Requesters new to online searching and experienced requesters who are new to a particular database may need to know the meaning of the mnemonic codes sometimes used to identify fields on the printout. Using the global search-and-replace feature of the word processor, the code "IN" can be replaced with the words "Institutional Affiliation:" throughout the document in a single operation. After a few such adjustments to take care of similar codes, the printout is converted into a much more legible document.

Lengthy printouts containing abstracts and retrieval from the new full-text databases can be nightmares to scan for significant concepts. Again, using global search and replace, certain words or phrases can be located and underlined or printed in bold face. The requester can spot them at a glance and focus on the significant passages. The word processor can thus be used as a "mini" search system to search the retrieved citations!

Cost and sign-off information provided by the host computer can be moved to a separate, final page of the printout. It can easily be detached and filed to be logged or billed later.

DELIVERING SEARCH RESULTS ELECTRONICALLY

If your requester has access to a PC, search results need never see paper. You can capture them, process them as you wish, and transmit them to any telecommunicating microcomputer with a compatible operating system and communications software.

CROSSTALK performs effortless, error-checked transfers with other IBM PC's running CROSSTALK. If the other computer is in answer mode (using the CROSSTALK MOde command), your computer can call it or vice versa. Once the computers have made the connection, simply enter the transmit command (at the **Command?** prompt):

XM FILENAME

Substitute the name of the file for the word FILENAME.

XM A:FILENAME B:

This would send the file from your A: drive to the receiving computer's B: drive.

The **SEnd** command works the same way but is used to send text files to a computer system not running CROSSTALK. See the CROSSTALK manual for details on the system's file transfer capabilities.

Requesters with access to no more than a dumb terminal can receive their search results electronically via CROSSTALK. However, because of the speed of the microcomputer, time delays must be built in after each line to allow the dumb terminal to print and return its carriage. We have found that this works well at 300 baud but have been unable to make it work any faster.

When sending files to a dumb terminal, be sure that each device is using the same communications parameters (baud rate, duplex, etc.). Use LWait to set a delay of one second between lines sent. This is done by entering the following at the **Command?** prompt:

LWait Delay 10

Place your computer in answer mode, and have the person using the dumb terminal call your computer's number. Once the connection has been established, use the SEnd FILENAME command to send the file. The search results will be printed by the dumb terminal exactly as if coming directly from the databank. If some characters are lost, increase the delay time and try again.

A NOTE TO TELEX USERS

If you will use your IBM PC and CROSSTALK to access the TELEX electronic mail system, a special setting must be made before ►

CROSSTALK will send a readable message.

The usual way to access TELEX through a microcomputer is by creating a specially formatted message in a text editor or word processor, saving it as a disk file, and sending that file through the phone line.

The CROSSTALK OUtfilter control, however, if in the default "on" position, strips off line feed characters needed by TELEX as the message is transmitted. To prevent this, the command file used to access TELEX should have its OUtfilter turned off. Here is a copy of command file settings suggested for access to TELEX:

CROSSTALK – XVI Status Screen **Off line**

NAme	TELEX					LOaded	E:TELEX.XTK		
NUmber						CApture	Off		
Communications parameters						**Filter settings**			
SPeed	1200	PArity	Even	DUplex	Half	DEbug	Off	LFauto	On
DAta	7	STop	1	EMulate	None	TAbex	Off	BLankex	Off
POrt	1			MOde	Call	INfilter	Off	OUtfiltr	Off
Key settings						**SEnd control settings**			
ATten	Esc					COmmand	ETX (^C)	CWait	None
SWitch	Home					BReak	End	LWait	None

Note that the data bits are set to 7 and the filters are turned off.

COMMON PROBLEMS

In my experience answering telephone requests to trouble-shoot communications problems, certain common denominators have become evident. These account for approximately 80% of all telecommunications problems encountered by new users.

1. The modem will not dial the number

This usually has one of three causes. If the OH light comes on when the modem should be dialing but no dial tone or dialing pulses are heard, chances are good that the volume control behind the modem simply needs to be turned up.

If the online light does not come on, usually either the modem switches aren't set properly or the parity needs to be adjusted. The Hayes 1200 modem switch settings we have found to work best are: switches 3, 4, and 8 down, the rest up. Check your modem manual and your communications software manual to see if the switches are set properly.

If you still cannot get the modem to dial, check the parity setting in your loaded command file. If it is set to None, try it at either Even or Odd.

2. The modem dials but will not connect

Occasionally modems get lost in an electronic wonderland and need to be re-started. The main symptom of this is that the modem will dial, the other computer will answer, but the connection is never consummated and the speaker is never turned off. To correct this problem and re-set the modem, simply reach behind it, turn it off, wait a couple of seconds, and turn it back on. Try to dial again and the process should work properly.

3. The computer goes into a slow freeze

Occasionally, everything seems to work fine except that there is a 10 to 15 second delay between the transmission of characters. This can be caused by having the printer parameter set to "on" but having the printer itself turned off. Turn on the printer and everything should speed up to the normal rate.

4. The call is connected but nothing seems to work

If you hear the call go through, but the computer at the other end does not respond to your commands or sends back gibberish, check your data bits setting; you may have forgotten to set it at 7 to access a databank. This is probably the most common error with searchers who are new to CROSSTALK.

CONCLUSION

This brings our series to an end, but it is only the end of the beginning. We have described a tool which has the potential to change dramatically the searcher's daily life. However, such a blueprint can only sketch the outline of this remarkable search machine. Its real powers and capabilities will be demonstrated only when it is applied in your own searching environment.

Communications to the author should be addressed to Stuart J. Kolner, Branch Librarian-Rockford and Associate Professor, Library of Health Sciences, 1601 Parkview Avenue, Rockford, IL 61107, telephone (815) 987-7377.

THE "SEARCHER'S JOURNAL"...

For Professional Database Searchers... And Database Builders

database®

SIX KEY REASONS

Why Thousands Of Searchers Keep *DATABASE* Near Their Terminal

1. In-depth Articles Keep You Up-To-Date On New Databases In **Business, Science And Technology, Life Sciences, Law, Arts** And **Humanities**.

2. Current Coverage Of Databases On **CDROMs And Other Laserdisks**. Reviews And Case Histories.

3. **Microcomputers In Libraries**. A Steady Flow Of Software Reviews, Hardware Evaluations, Applications Ideas, And Program Codes.

4. Database Creation...**How-to Articles On Building Your Own File**...On Magnetic Disks Or CDROM Or WORM.

5. **News, Special Columns**, Book Reviews, Editorials And Letters.

6. Lots Of **Charts, Lists, Bibliographies**, Directories And Search Printouts.

Consider The Useful, Money-Saving Tips In This Sampling Of Recent Articles...

"Establishing A Business Intelligence Clearinghouse"... "The Beilstein Chemistry Database"..."Sources of Japanese Business Information"..."CDROM vs. Online vs. Data Tapes vs. Print"..."Searching Current Events"..."Crossfile Searching For Patents"..."Online Sources of Competitive Intelligence"..."Online Tax Information"..."Laserdisk Directory" (five part series)..."PROMT – The Megafile"..."Guide to DBMS Software"..."Full Text Searching"..."Review of STAR Software"..."Regional Business Information"..."LEXIS and WESTLAW Downloading Techniques"..."Comparison of Low Cost Communications Software for PCs"..."INDEXIT Software Review"..."INMAGIC...Kudos and Caveats"..."Survey of Computer Databases"..."Online and Offline Cost Comparison"...

***DATABASE* Will More Than Pay Its Cost By Helping Your Search Proficiency...And We Offer A No-risk, Money Back Guarantee To Prove It... Plus 40% Discounts On Personal, Multiple Organizational And Small Public/Academic Library Orders**

Order Now Toll-Free – Or Use The Coupon Below
800/248-8466

To: Online, Inc., 11 Tannery La., Weston, CT 06883

Yes, I'll try *DATABASE* on a no-risk basis. If not satisfied I can cancel and keep the first issue free.

☐ *DATABASE* (6X/yr) organizational price: $85
☐ *DATABASE* 40% discount (personal checks, home delivery...second & additional organiz. orders to same address...pub./academ. libraries under $100K/yr materials budget: $51
Mexico and C.A., please add $15/yr.
All other international (airmail only), add $35/yr.

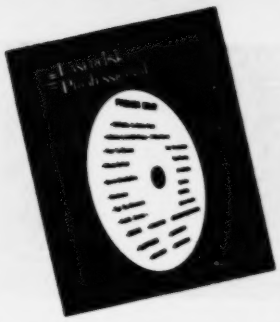
Please include check or credit card number with order.

Send to _____
Company _____
Address _____
City _____
State _____ Zip _____

Charge to ☐ AMEX ☐ VISA ☐ MasterCard

Card no. _____
Expiration date _____

ANNOUNCING THE Laserdisk Professional™



AT LAST. . .A Practical, How-to Journal For Laserdisk Librarians With The Editorial Excellence of ONLINE And database

The Laserdisk Professional Will Bring You A Full Range Of Original Articles And Columns. . .Some Examples:

ARTICLES. . .

- **CDROMs As Online Hosts** On Local Networks.
- **Laserdisks In Libraries**. . .Who Is Using Them And What Do They Like—Or Dislike? The First Major Survey In The Field.
- **Public Access** To Laserdisks. . .Experts' Reports On Problems And Solutions.
- **How To Buy** Your First CDROM Workstation. . .Do's And Don'ts.
- **The Seven Deadly Sins** Of CDROM Usage. . . And How To Avoid Them.
- **The Top Ten** Laserdisks Bestsellers—By Library Type.
- **Future Tech**. . .Some Likely Scenarios Beyond CDROMs.

PLUS. . .

- **Product PREviews**. . .Reports From The Beta Test Sites
- **Individual Product** Reviews. . .User Evaluations Of Commercially Available Laserdisks
- **Product Comparisons**. . .Feature-by-Feature Analysis Of Disks With Similar Databases
- **NEWS**. . .New Databases On Disk, New Hardware. . .A Roundup Of Developments In The Full Range Of Optical Disk Technology
- **Regular Columns**. . ."Hardware Highlights"—Features And Photos Of Newly Available Equipment. . .Plus "Laserdisk Library Profiles"—Case Histories Of Successful Installations
- **Readers' Questions**. . .Experts Answer Your Questions About Hardware And Database Selection, Installation, Patron Service, Funding And Marketing
- **Book & Magazine Reviews**. . .Evaluations Of Currently Available Publications
- **Letters** To The Editor, **Interviews** With Pioneering Librarians And Industry Executives, And Thoughtful Editorial Comment

Premier issue:
April, 1988
Frequency: bimonthly
Price: $78/yr.
Editor: Nancy K. Herther
Publisher: Adam C. Pemberton
Order Now To Be Sure To Get The Premier Issue
Call Toll-free (800) 248-8466. . .Or Use The Attached Coupon

ONLINE THE Laserdisk Professional database

Special Offer For Prepaid Subscribers. . .A Free IBM Compat. Demo Floppy Of DIALOG OnDisc CDROM. . .

Mail To: Laserdisk Professional
11 Tannery Lane, Weston, CT 06883

☐ Yes, I'd like to start the *Laserdisk Professional* with the Premier Issue and receive the free offer.
☐ The *Laserdisk Professional* (6X/yr.)—$78/yr. U.S.
☐ Mexico and C.A. please add $15/yr.
☐ All other international, add $30 (airmail only)

Name _____

Organization _____

Street _____

City _____ State/Province _____ Zip _____

Country _____

☐ AMEX ☐ VISA ☐ MasterCard

Acct # _____ Exp. date _____

Please enclose check to receive free offer. If not satisfied, you may cancel and keep first issue and gift.
Or ORDER TOLL-FREE 800/248-8466 with AMEX, VISA or MasterCard.